

حمل الآن

مجاناً وحصرياً

# امتحانات رقم (1)

## الترم الاول



## Model Exam 1

Total mark
20

Answer the following questions :

## Question 1 5 marks

A Cross out the odd word, then write the name of the others :

1. Lithium – Sodium – Helium – Potassium.
2. Dodo bird – Quagga – Bald eagle – Mammoth.

B 1. Complete the following sentences :

- a. The highest temperature layer in the atmosphere is ..... , while the coldest one is .....
- b. Mendeleev arranged the elements ascendingly according to ..... , while Moseley arranged them according to .....

2. Write the scientific term of each of the following :

- a. Arrangement of metals in a descending order according to the degree of their chemical activity.
- b. A weak electrostatic attraction that arises between the molecules of some polar compounds.

## Question 2 5 marks

A Correct the underlined words :

1. Methane gas is from pollutants of ozone layer.
2. Increasing in the concentration of lead element in water causes liver cancer.

B Determine the location of these elements in the modern periodic table :

1.  $_{10}\text{Ne}$
2.  $_{17}\text{Cl}$
3.  $_{20}\text{Ca}$
4.  $_{2}\text{He}$

## Question 3 5 marks

A Put (✓) or (✗) :

1. Desert is an example of simple ecosystem. ( )
2. Water in solid state has lower density than that of liquid state. ( )

B Give reasons for the following :

1. Occurrence of old extinction.
2. Ozone layer is formed in the stratosphere.
3. Elements of the same group have similar chemical properties.
4. Water is a polar compound.



**Question 4** 5 marks

**A Choose the correct answer :**

- The thickness of the stratosphere layer is ..... km.  
a. 50                      b. 37                      c. 13                      d. 80
- The strongest nonmetal is .....  
a. chlorine.              b. fluorine.              c. silicon.              d. neon.

**B 1. Compare between alkali metals and halogens** (according to : group – valency – ion – example).

**2. What happens if ...?**

- One member is absent in the complicated ecosystem.
- Adding chlorine to potassium bromide. (the chemical equation only).

**Model Exam 2**

Total mark

20

Answer the following questions :

**Question 1** 5 marks

**A Put (✓) or (✗) :**

- Each period in the modern periodic table starts with strong metal. ( )
- The first fossil of mammoth was discovered in amber. ( )

**B Write the scientific term of each of the following :**

- Elements that have the properties of metals and nonmetals.
- It is a group of food chains connected with each other.
- The ion which carries a number of charges equals the number of gained electrons.
- Curved lines that join the points of equal pressure in atmospheric pressure maps.

**Question 2** 5 marks

**A Correct the underlined words in each of the following :**

- The temperature at the end of thermosphere 120°C.
- The liquified nitrogen is used inside the nuclear reactors.

**B Complete the following sentences :**

- $\text{MgO} + \text{H}_2\text{O} \longrightarrow$  .....
- The ..... is used in manufacture of electronic devices.
- The degree of ozone is measured by unit called .....
- The ultraviolet radiation has ..... effect.



**Question 3** 5 marks**A** Cross out the odd word, then write the relation between the rest :

1. Panda bear – Bald eagle – Mammoth – Rhinoceros.
2.  $\text{CH}_4$  –  $\text{N}_2\text{O}$  –  $\text{O}_2$  –  $\text{CO}_2$

**B** Write an example of :

1. A metalloid.
2. An element that has zero electronegativity.
3. A weaker polar compound than water.
4. A microfossil that helps in petroleum exploration.

**Question 4** 5 marks**A** Choose the correct answer :

1. .... increase as we go from left to right in the modern periodic table.
  - a. Atomic size and metallic property
  - b. Electronegativity and atomic size
  - c. Nonmetallic property and atomic size
  - d. Electronegativity and nonmetallic property
2. If a pilot is flying at a height of atmospheric pressure 80 mbar, so he is flying in .....
  - a. troposphere.
  - b. exosphere.
  - c. stratosphere.
  - d. mesosphere.

**B** Calculate :

1. The temperature at the top of a mountain its height is 2 km., and the temperature at its foot equals  $20^\circ\text{C}$ .
2. The atomic number of an element (X) that lies in group zero and period three.

**Model Exam 3**

Total mark

20

Answer the following questions :

**Question 1** 5 marks**A** Choose the correct answer :

1. Fossils are important for all of the following except .....
  - a. determination of sedimentary rocks age.
  - b. studying the kinds of metals.
  - c. petroleum exploration.
  - d. figuring out the paleoenvironment.
2. The scientist ..... added zero group which includes inert gases to his table.
  - a. Mendeleev
  - b. Rutherford
  - c. Moseley
  - d. Bohr





**B Calculate :**

On the electrolysis of a certain volume of acidified water, the volume of the evolved gas at the anode was  $2 \text{ cm}^3$ , what is the volume of the other gas ?

**Question 2** 5 marks

**A Put (✓) or (✗) :**

1. The infrared rays has a chemical effect. ( )
2. Eating fish which contain high percentage of mercury causes blindness. ( )

**B Write the scientific term :**

1. It is the ability of the atom in covalent molecule to attract the electrons of the bond towards itself.
2. Safe areas established to protect the endangered species in their homeland.
3. The block that contains the series of lanthanide and actinides.
4. A charged layer reflects radio waves and found in upper part of thermosphere layer.

**Question 3** 5 marks

**A Correct the underlined words in each of the following :**

1. Number of period indicates to the number of electrons in the outer energy level.
2. Atmospheric pressure is measured by a unit called meter.

**B Complete the following sentences :**

1. .... and .... are found below the modern periodic table.
2. .... gas is used in making insecticides that can affect the .....
3. Covalent bond can be broken by ..... or .....
4. Petrification takes place when ..... replaces the ..... material after decomposition.

**Question 4** 5 marks

**A Choose from column (B) what suits it in column (A) :**

(A)	(B)
1. The first vertebrates that appeared on the Earth.	a. reptiles.
2. The plant which is used by pharaohs to manufacture writing papers.	b. papyrus.
	c. fish.

**B Give one example of :**

1. Liquid halogen.
2. Element used in food preservation.
3. Complicated system.
4. Pollutant causes depletion of ozone layer.

**Model Exam**

**4**

Total mark

20

Answer the following questions :

**Question 1** 5 marks

**A Cross out the odd word, then write the scientific term of the others :**

1. Dodo bird – Papyrus plant – Ibis bird – Rhinoceros.
2. Carbon dioxide – Nitrogen – Water vapor – Chlorofluorocarbon.

**B Give reasons for the following :**

1. Pilots prefer to fly their planes in the lower part of stratosphere.
2. The atomic size increases as we go down through the same group in the periodic table.
3. Sulphur dioxide is an acidic oxide.
4. Liquefied nitrogen is used in preservation of the cornea of the eye.

**Question 2** 5 marks

**A Put (✓) or (✗) :**

1. Degree of ozone at STP is 200 Dobson. ( )
2. Ras Mohamed protectorate is the first established protectorate in Egypt. ( )

**B Write the scientific term :**

1. An ecosystem that has many alternatives if one species is extinct.
2. Descending arrangement for metals according to their chemical activity.
3. The measuring unit of atomic size.
4. A phenomenon that takes place as a result of scattering harmful cosmic radiations and seen at the two poles of Earth.

**Question 3** 5 marks

**A Choose the correct answer :**

1. The shortest wave length of ultraviolet radiation is .....  
 a. near.                      b. medium.                      c. far.                      d. no correct answer.
2. Fossils that indicate the environment where they lived was a hot rainy tropical environment is .....  
 a. coral fossils.                      b. nummulites fossils.                      c. ferns fossils.                      d. trilobite fossils.



**B Complete the following statements :**

1. Outer most energy level of halogen atom contain ..... electrons, but outer most energy level of atom of alkali metals contain ..... electron.
2. .... is the smallest atom, while ..... is the largest atom.
3. Ultraviolet radiation has ..... effect and infrared radiation has ..... effect.
4. Archaeopteryx represents a link between ..... and .....

**Question 4** 5 marks

**A Correct the underlined words :**

1. The height of mountain if the temperature at its base is (30°C) and at its top is (– 9°C) equals 3 km.
2. Amber replaces wood materials to form petrified woods.

**B Answer the following questions :**

1. Who discover the main energy levels of the atom ?
2. Classify the following elements into two groups :  $_{19}\text{K} - _{15}\text{P} - _{12}\text{Mg} - _6\text{C} - _{13}\text{Al} - _8\text{O}$
3. What is the importance of Van-Allen belts ?
4. What happen if there is no ozone layer ?

**Model Exam 5**

Total mark

20

Answer the following questions :

**Question 1** 5 marks

**A Arrange the following according to that between brackets :**

1. Cast fossil of fish – Mammoth fossil – Nummulite fossil – Archaeopteryx fossil.  
(Start from first appearance on the life stage)
2. Troposphere – Stratosphere – Mesosphere – Thermosphere.  
(Ascendingly according to their temperature at the top of each layer)

**B Complete the following sentences :**

1.  $\text{Mg} + 2\text{HCl} \longrightarrow \dots + \dots$
2. .... and ..... are examples of polar compounds.
3. The air movement in troposphere is ....., while the air movement in stratosphere is .....
4. Among the pollutants of the ozone layer are ..... compounds that are used in air conditioning sets and ..... compounds that are used in fire extinguishers.



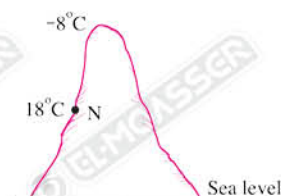
**Question 2** 5 marks**A Put (✓) or (✗) :**

1. Rutherford added zero group to the periodic table. ( )
2. The polarity of water molecule is stronger than that of ammonia molecule. ( )

**B Answer the following questions :**

1. A person stands at the point (N) in the middle of mountain and temperature at this point ( $18^{\circ}\text{C}$ ) and at the top of mountain ( $-8^{\circ}\text{C}$ ) **Calculate :**

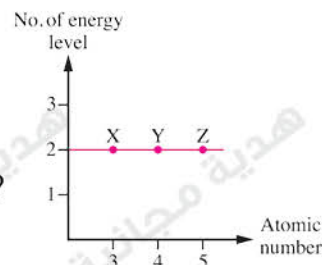
- a. Height of mountain.
- b. The temperature at the foot of mountain.



2. **Study the opposite graph which shows :**

The relation between atomic number and the number of energy levels occupied by electrons in 3 elements (X), (Y), (Z).

- a. Are these elements in the same period or in the same group ?
- b. Which of these elements has the largest atomic size ?

**Question 3** 5 marks**A Choose the correct answer :**

1. Element ..... lies in the first period and zero group.
  - a.  ${}^1\text{H}$
  - b.  ${}_{10}\text{Ne}$
  - c.  ${}_{20}\text{Ca}$
  - d.  ${}^2\text{He}$
2. .... react very slowly with cold water.
  - a. K and Na
  - b. Cu and Ag
  - c. Zn and Fe
  - d. Ca and Mg

**B Give one example of :**

1. Amber fossil.
2. Element reacts in high temperature with only hot water vapour.
3. Element used in preservation of the cornea of the eye.
4. Pollutant of ozone layer that results from the burning fuel of ultrasound airplanes.

**Question 4** 5 marks**A Correct the underlined words :**

1. Ammeter is used in electrolysis of water.
2. Mammoth is an example of microfossils.

**B Mention the number representing each of the following :**

1. Number of known elements in the modern periodic table till now.
2. Number of groups in p-block.
3. Number of layers of the atmosphere.
4. Normal degree of ozone in the atmosphere.

## Model Exam 1

1

- (A) 1. Helium, the others are alkali metals.  
2. Bald eagle, the others are extinct animals.
- (B) 1. (a) thermosphere – mesosphere.  
(b) their atomic weights – their atomic numbers.  
2. (a) Chemical activity series.  
(b) Hydrogen bond.

2

- (A) 1. Methyl bromide gas.  
2. arsenic.
- (B) 1.  $+10$
2.  $+17$
3.  $+20$
4.  $+2$
- Period (2)  
Group (0)
- Period (3)  
Group (7A)
- Period (4)  
Group (2A)
- Period (1)  
Group (0)

3

- (A) 1. (✓) 2. (✓)
- (B) 1. Due to : Meteorite impacts with Earth.  
– The violent Earth movement.  
– Exposure of the Earth to long ice age.  
– Toxic gases which evolved from volcanoes.  
2. Because stratosphere layer is the first layer in the atmosphere which contains suitable amount of oxygen gas, that faces ultraviolet radiations emitted from the Sun.  
3. Because their atoms have the same number of electrons in the outermost energy levels.  
4. Because the difference in electronegativity between the elements forming its molecule is relatively high.

4

- (A) 1. b 2. b
- (B) 1.
- | P.O.C        | Alkali metals | Halogens      |
|--------------|---------------|---------------|
| 1. Group no. | (1) 1A        | 17 (7A)       |
| 2. Valency.  | monovalent    | monovalent    |
| 3. Ion       | Positive ions | Negative ions |
| 4. Example   | Sodium (Na)   | Chlorine (Cl) |
2. (a) It is not affected much, because it has many alternatives.  
(b)  $\text{Cl}_2 + 2\text{KBr} \longrightarrow 2\text{KCl} + \text{Br}_2$

## Model Exam 2

1

- (A) 1. (✓) 2. (X)
- (B) 1. Metalloids. 2. Food web.  
3. Negative ion. 4. Isobar.

2

- (A) 1.  $1200^\circ\text{C}$  2. liquid sodium.  
(B) 1.  $\text{Mg}(\text{OH})_2$  2. silicon.  
3. Dobson. 4. chemical.

3

- (A) 1. Mammoth, the rest are endangered species.  
2.  $\text{O}_2$ , the rest are greenhouse gases.
- (B) 1. Boron. 2. Helium.  
3. Ammonia. 4. Radiolaria.

4

- (A) 1. d 2. c
- (B) 1. The amount of decrease in temperature  
= height  $\times$  6.5 =  $2 \times 6.5 = 13^\circ\text{C}$   
The temperature of the top of mountain =  
the temperature at its foot – the amount of decrease  
in temperature =  $20 - 13 = 7^\circ\text{C}$   
2. Atomic number =  $2 + 8 + 8 = 18$

## Model Exam 3

1

- (A) 1. b 2. c
- (B) The volume of the evolved gas at the anode (oxygen) =  $2 \text{ cm}^3$   
The volume of the other gas (hydrogen)  
=  $2 \times 2 = 4 \text{ cm}^3$

2

- (A) 1. (X) 2. (✓)  
(B) 1. Electronegativity. 2. Natural protectorates.  
3. f-block. 4. Ionosphere.

3

- (A) 1. group 2. bar or millibar.  
(B) 1. Lanthanides – actinides  
2. Methyl bromide – ozone layer.  
3. ultraviolet rays – electrolysis.  
4. minerals – organic

4

- (A) 1. c 2. b  
(B) 1. Bromine. 2. Radioactive cobalt 60  
3. Tropical forest. 4. Halons.

### Model Exam 4

1

- (A) 1. Dodo bird, scientific term : Endangered species.  
2. Nitrogen, scientific term : Greenhouse gases.  
(B) 1. Because in this part, the air motion is horizontally and neither clouds nor weather turbulences exist.  
2. Due to the increase of the number of energy levels through the group by increasing the atomic number.  
3. Because it is a nonmetal oxide which dissolves in water forming acidic solution that turns violet litmus solution into red.  
4. Due to the decrease of its boiling point (– 196°C).

2

- (A) 1. (X) 2. (✓)  
(B) 1. Complicated ecosystem.  
2. Chemical activity series.  
3. Picometre. 4. Aurora phenomenon.

3

- (A) 1. c 2. c  
(B) 1. (7) – (1) 2. Fluorine – cesium  
3. chemical – thermal 4. reptiles – birds.

4

- (A) 1. 6 km. 2. Silica  
(B) 1. Bohr.

2. Metals :  ${}_{19}\text{K}$ ,  ${}_{12}\text{Mg}$ ,  ${}_{13}\text{Al}$

Nonmetals :  ${}_{15}\text{P}$ ,  ${}_{6}\text{C}$ ,  ${}_{8}\text{O}$

3. They play an important role in scattering harmful charged cosmic radiations away from the Earth.  
4. Medium and far UV rays penetrate atmosphere and reaching Earth causing harmful effects.

### Model Exam 5

1

- (A) 1. Nummulite fossil – Cast fossil of fish – Archaeopteryx fossil – Mammoth fossil.  
2. Mesosphere – Troposphere – Stratosphere – Thermosphere.  
(B) 1.  $\text{MgCl}_2 + \text{H}_2\uparrow$  2. Ammonia – water.  
3. vertically – horizontally.  
4. chlorofluorocarbon – halons.

2

- (A) 1. (X) 2. (✓)  
(B) 1. (a) The amount of decrease in temperature =  
temp. at the point (N) – temp. at the top  
=  $18 - (-8) = 26^\circ\text{C}$   
Height of mountain from point (N) to the top  
=  $\frac{\text{the amount of decrease in temp.}}{6.5} = \frac{26}{6.5} = 4 \text{ Km.}$   
Height of the mountain =  $4 \times 2 = 8 \text{ Km.}$   
(b) The amount of increase in temperature  
= height  $\times 6.5 = 8 \times 6.5 = 52^\circ\text{C}$   
The temperature at the foot of mountain.  
= temp. at its top + the amount of increase in temp.  
=  $(-8) + 52 = 44^\circ\text{C}$   
2. (a) These elements are in the same period.  
(b) X

3

- (A) 1. d 2. d  
(B) 1. Insects fossil. 2. Zinc.  
3. Liquefied nitrogen. 4. Nitrogen oxides.

4

- (A) 1. Hofmann's voltameter  
2. Foraminifera  
(B) 1. (118) 2. (6)  
3. (4) 4. (300) Dobson



# كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



حمل الآن

مجاناً وحصرياً

# امتحانات رقم (2)

## الترم الاول





# Final Examinations

## of Some Governorates

2024

### 1 Cairo Governorate

Heliopolis Educational Zone

Answer the following questions :

#### Question 1

##### A Choose the correct answer :

- The number of known elements till now is .....  
a. 92 elements.      b. 118 elements.      c. 67 elements.      d. 26 elements.
- The region in which satellites float in it is .....  
a. mesopause.      b. ionosphere.      c. mesosphere.      d. exosphere.
- All of the following are from acidic oxides except .....  
a.  $\text{SO}_2$       b.  $\text{CO}_2$       c.  $\text{NO}_2$       d.  $\text{Na}_2\text{O}$
- ..... is considered the first protectorate in Egypt to protect coral reefs.  
a. Panda      b. Ras Mohamed      c. Wadi El-Raiyan      d. Yellowstone

##### B Write the scientific term of each of the following :

- The ability of atom in the covalent molecule to attract electrons towards itself.
- The molecule that is formed as a result of combination between element atom with molecule of the same element.
- The periodic table in which elements arranged according to their atomic weights.

##### C If you know that the volume of hydrogen gas that is evolved at cathode during electrolysis of water is $24 \text{ cm}^3$ , find the volume of oxygen gas that is evolved at anode.

#### Question 2

##### A Complete the following sentences :

- The element  $_{12}\text{Mg}$  locates in period ..... and group .....
- From examples of complete body fossils is ..... and ..... is from examples of petrified fossils.
- ..... is the coldest layer in the atmosphere but ..... is the hottest layer.
- Increasing the concentration of ..... causes blindness but increasing the concentration of ..... causes death of brain cells.

##### B Choose the odd word out and write the scientific name for the rest :

- Boron – Neon – Silicon – Germanium.



## Part 3

2. Carbon dioxide – Methane – Oxygen – Water vapour.
3. Sodium – Bromine – Chlorine – Fluorine.

### C Compare between mold fossil and cast fossil.

#### Question 3

##### A Correct the underlined words :

1. Pilots prefer to fly their planes in the lower part of thermosphere.
2. Lithium is the most active metal.
3. Silicon is used in preservation of cornea of the eye.
4. From the old reasons for extinction is the severe climatic change.

##### B Arrange the following :

1. Potassium (19) – Fluorine (9) – Lithium (3) – Calcium (20).  
(from biggest to smallest atomic size)
2. Stratosphere – Thermosphere – Troposphere – Mesosphere. (from furthest to nearest)
3. Iodine – Chlorine – Bromine – Fluorine. (from strongest to weakest)

##### C Give a reason for dissolving sugar in water although it is a covalent molecule.

#### Question 4

##### A Put (✓) or (✗) of each of the following, then correct the wrong ones :

1. The scientist Bohr discovered that the positive protons inside nucleus. ( )
2. The aneroid is used to determine the possible day weather by knowing the atmospheric pressure. ( )
3. The coral fossils indicate that the environment was hot and rainy. ( )
4. It is prefer to use concorde airplanes as they protect the ozone layer. ( )

##### B Mention an example of the following :

1. A polar compound.
2. A microfossil.
3. A measuring unit of atmospheric pressure.

##### C What happens when ...?

A member disappears in the simple ecosystem. (mention the reason)

## 2 Cairo Governorate

### El-Nozha Educational Zone

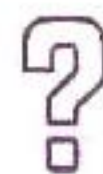
Answer the following questions :

#### Question 1

##### A Choose the correct answer :

1. .... is the replica of internal details of old living organisms.  
a. Fern cast                      b. Ammonites                      c. Fish cast                      d. Amber





2. Ozone layer is found in ..... layer.
  - a. troposphere
  - b. stratosphere
  - c. mesosphere
  - d. thermosphere
3. Increasing the concentration of ..... causes blindness.
  - a. lead
  - b. arsenic
  - c. mercury
  - d. chlorine
4. The elements which occupy the middle block(d) in the periodic table are called ..... elements.
  - a. alkali
  - b. noble
  - c. transition
  - d. alkaline Earth

**B Choose the odd word out for the following :**

1. Silver – Sodium – Iron – Calcium.
2.  $\text{CO}_2$  –  $\text{MgO}$  –  $\text{Na}_2\text{O}$  –  $\text{CaO}$
3. Nitrogen oxides – Water vapour – Freon – Halons.

**C Write the scientific term for the following :**

The ability of the atom in the covalent molecule to attract the electrons of the chemical bond to itself.

**Question 2**

**A Correct the underlined words :**

1. Petrified woods are replaced by sand.
2. Water electrolysis produces hydrogen gas only.
3. Rutherford was the founder of the first periodic table.
4. The thermosphere layer is much vacuumed layer.

**B Complete the sentences by using words between brackets :**

(Ammonia – Infrared – Troposphere – Alkali metals – Halogens – Ultraviolet)

1. .... radiation is characterized by thermal effect.
2. .... have 7 electron in the outermost energy level.
3. .... is a polar compound that has four atoms.

**C Give a reason for the following : Dodo bird was an easy target for hunters.**

**Question 3**

**A Choose from column (B) what suits it in column (A) :**

(A)	(B)
1. Radiant pollution	a. making foam boxes.
2. Freon is used in	b. is due to the atomic wastes.
3. Biological pollution	c. is due to mixing human with animals wastes.
	d. they are used in extinguishing fire.



## Part 3

### B Rearrange the following :

1. Zinc – Calcium – Silver – Sodium. (ascendingly according to chemical activity).
2. Stratopause – Tropopause – Mesopause. (from the sea level).
3. Fish – Mammals – Reptiles. (according to first appearance on life stage).

### C Find the volume of the gas which is evolved at the anode during the electrolysis of water, if the volume of the other gas is $20\text{ cm}^3$ .

## Question 4

### A Put (✓) or (✗) in front of the following :

1. Tropical forest is an example of simple ecosystem. ( )
2. Water electrolysis takes place by barometer. ( )
3. Satellites orbit in ionosphere. ( )
4. Both oil and sugar are covalent compounds. ( )

### B Write the function of :

1. Van-Allen belts.
2. Sedimentary rocks to fossils.
3. Hofmann's voltameter.

### C Locate the position of the element in the modern periodic table : $_{18}\text{Ar}$

## 3 Cairo Governorate

Manar Al-Salam School

Answer the following questions :

## Question 1

### A Write the scientific term for the following :

1. The ability of an atom in the covalent compound to attract the bonded electrons.
2. Addition of any substance to water that causes continuous gradual change in water properties.
3. Charged layer reflects radio waves.
4. Traces and remains of old living organisms that are preserved in the sedimentary rocks.

### B Correct the underlined words :

1. Fluorine is the only liquid halogen.
2. Transition elements lie in s-block.
3. The measuring unit of the degree of ozone layer is bar.

### C Determine :

The position and type of ( $_{19}\text{K}$ ) in the modern periodic table.





## Question 2

### A Choose the correct answer :

- The largest atomic size group is .....  
 a. 2A                      b. 1A                      c. zero                      d. 7A
- The normal atmospheric pressure at the sea level equals ..... millibar.  
 a. 1013.25                      b. 76                      c. 1.013                      d. 37
- Complete fossils of insects are found preserved in .....  
 a. ammonites.                      b. igneous rocks.                      c. amber.                      d. ambergris.
- ..... replaces ..... in solutions of its salts.  
 a. Chlorine – bromine                      b. Bromine – fluorine  
 c. Iodine – chlorine                      d. Iodine – fluorine

### B Choose the odd word out :

- $\text{CO}_2 - \text{O}_2 - \text{N}_2\text{O} - \text{CH}_4$
- $\text{K}_2\text{O} - \text{Na}_2\text{O} - \text{Al}_2\text{O}_3 - \text{MgO}$
- Helium – Chlorine – Argon – Neon.

### C What happens when ...? The continuous decrease in the number of a certain species.

## Question 3

### A Put (✓) or (✗) :

- The air moves horizontally in the lower part of stratosphere. ( )
- Ferns fossils indicate that they lived in mild environment. ( )
- Water and ammonia are non-polar compounds. ( )
- Ice crystals have pentagonal shapes. ( )

### B Complete the following chemical equations :

- ..... + .....  $\xrightarrow{\Delta}$   $\text{CO}_2$
- $\text{Mg} + 2\text{HCl} \xrightarrow{\text{dil.}}$  ..... + .....
- $2\text{H}_2\text{O} \xrightarrow{\text{Electrolysis}}$  ..... + .....

### C Compare between :

The basic of the classification of elements according to Mendeleev and Mosley.



### Question **4**

**A** Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Mesosphere	a. is a link between reptiles and birds.
2. Stratosphere	b. contains helium and hydrogen gases.
3. Archaeopteryx fossil	c. is caused by mercury pollutant.
4. Blindness	d. contains ozone layer.

**B** Give reasons for :

1. Water has high boiling point.
2. Simple ecosystem is affected strongly by the absence of one of its species.
3. Van-Allen belts play an important role in atmosphere.

**C** Calculate the height of a mountain if the temperature at its foot is  $20^{\circ}\text{C}$  and at its top is  $(-6^{\circ}\text{C})$ .

## **4** Cairo Governorate

Leader Language School

Answer the following questions :

### Question **1**

**A** Choose the correct answer :

1. Mammoth is a type of elephants was extinct by .....  
a. winds.                      b. silica.                      c. snow.                      d. amber.
2. In the same group, the element which has the largest atomic size lies in group .....  
a. 1A                      b. 2A                      c. 5A                      d. 7A
3. A replice of the outer shell shape of the skeleton of a living organism is .....  
a. mold.                      b. trace.                      c. petrified wood.                      d. cast.
4. If the temperature at the sea level is  $29^{\circ}\text{C}$ , the temperature at the top of a mountain of height 4 km will be .....  $^{\circ}\text{C}$ .  
a. 5                      b. 3                      c. zero                      d. 55

**B** Write the scientific term :

1. A gas that its liquid is used in preservation of the cornea of the eye.
2. Two magnetic belts surround the ionosphere and reflect the harmful cosmic radiation.
3. Traces and remains of old living organisms that are preserved at sedimentary rocks.

**C** Give one example for : Endangered animal.





## Question 2

### A Complete the following :

1. .... is the coldest atmospheric layer.
2. If an element (X) in the modern periodic table lies in period 2 and group zero, so its atomic number equals .....
3. .... is a continuous decrease in the number of a certain species of living organisms without compensation.
4. By increasing the atomic number in each group, the ..... increases.

### B Correct the underlined words :

1. We haven't to keep the tap water in glass bottles, because it reacts with chlorine gas causing cancer.
2. Fluorine is considered as the most active metal in the alkali metals group.
3. Moseley classified the elements in an ascending order according to their atomic weights.

### C Give a reason for : Increasing the size of the ozone hole in September every year.

## Question 3

### A Complete the sentences by using words between brackets :

(index – radiolaria – metalloids – dodo bird – transition)

1. The elements that have both properties of metals and non-metals are .....
2. .... is a bird that disappeared due to its short wings.
3. .... fossil is the fossil that is used in petroleum exploration.
4. .... fossil is the fossil that is used in age determination of sedimentary rocks.

### B Complete the following chemical equations :

1.  $2\text{Na} + \dots \longrightarrow 2\text{NaOH} + \dots$
2.  $2\text{H}_2\text{O} \xrightarrow{\text{Electrolysis}} \dots + \dots$
3.  $\text{Cl}_2 + 2\text{KBr} \longrightarrow \dots + \dots$

### C What is the importance of ... ? Cobalt 60

## Question 4

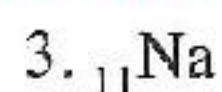
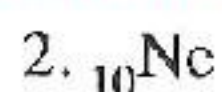
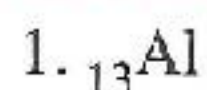
### A Put (✓) or (✗) :

1. Non-metal oxides dissolve in water forming acidic solutions. ( )
2. Pilots prefer to fly their planes in troposphere layer. ( )
3. Environmental pollution is one of the recent reasons of extinction. ( )
4. The bond between water molecules is single covalent bond. ( )



## Part 3

**B** Locate the position of the following elements in the modern periodic table :



**C** Compare between the following :

Group (1A) and group (7A)

(according to : Name – Valency)

### 5 Cairo Governorate

Mokattam Educational Zone

Answer the following questions :

#### Question 1

**A** Choose the correct answer :

- ..... protectorate is the first established natural protectorate in Egypt.  
a. Saint Cathrine    b. Ras Mohamed    c. Wadi Hetan    d. Panda
- Sodium oxide is from ..... oxides.  
a. amphoteric    b. acidic    c. basic    d. magnetic
- Each period in the modern periodic table starts with a/an ..... element.  
a. metallic    b. inert    c. semi-metal    d. nonmetallic
- Meteors are formed in .....  
a. ionosphere.    b. mesosphere.    c. stratosphere.    d. troposphere.

**B** Cross the odd word out :

- Sodium – Potassium – Lithium – Argon.
- Mammoth – Panda bear – Dinosaur – Dodo bird.
- Near UV – Medium UV – Far UV – Infrared rays.

**C** Who is the scientist discovered the main energy levels ?

#### Question 2

**A** Put (✓) or (✗) :

- The ozone layer is formed in the troposphere layer. ( )
- Fossils are used to indicate the age of sedimentary rocks. ( )
- Mixing human and animal wastes in seas and rivers causes thermal water pollution. ( )
- Water and ammonia are from polar compounds. ( )

**B** Complete the sentences by using words between brackets :

(mesosphere – solid – atomic weights – liquid – atomic numbers – thermosphere)

- Mendeleev arranged the elements ascendingly according to their ....., while Moseley arranged them ascendingly according to their .....





2. The hottest atmospheric layer is ..... , while the coldest atmospheric layer is .....

3. Bromine exists in a ..... state, while iodine exists in a ..... state.

**C Give a reason for :** Pilots prefer flying their airplanes in the stratosphere atmospheric layer.

### Question 3

**A Correct the underlined words :**

1.  $2\text{Na} + \text{Br}_2 \longrightarrow 2\text{NaCl}$

2. O<sub>2</sub> gas is from pollutants of the ozone layer.

3. The first fossil of a mammoth was discovered in amber.

4. The atomic size decreases in the same group by increasing the atomic number.

**B Mention one example of :**

1. A simple ecosystem.

2. An alkali metal.

3. A unit used to measure the degree of the ozone layer.

**C Locate the position of the following element in the periodic table :**  $_{11}\text{Na}$

### Question 4

**A Choose from column (B) what suits it in column (A) :**

(A)	(B)
1. Corals	a. the layer that contains all weather phenomena.
2. Ferns	b. causes blindness.
3. Troposphere	c. are fossils that indicate that the environment, where they lived was a hot and rainy tropical.
4. Mercury	d. are fossils that indicate that the environment, where they lived was clear warm shallow seas.

**B Write the scientific term :**

1. A phenomenon looks like bright colorful light curtains seen in the two poles.

2. A bond that exists between water molecules.

3. Traces or remains of old living organisms were preserved in sedimentary rocks.

**C Find the temperature at a height of 2 km. If the temperature at sea level is 25°C.**



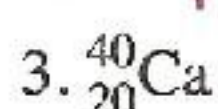
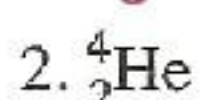
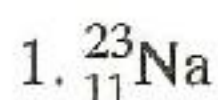
Answer the following questions :

### Question 1

#### A Complete the following :

1. Among the pollutants of ozone layer are ..... compounds that are used in air conditioning sets, and ..... compounds that are used in fire extinguisher.
2. Mendeleev arranged the elements ascendingly according to ....., while Moseley arranged them ascendingly according to .....
3. Most of weather conditions take place in ..... layer, while satellites orbit around the Earth in ..... layer.
4. Elements in group (1A) are called ....., while elements in group (7A) are called .....

#### B Locate the position of the following elements in the modern periodic table :



#### C Write one example for simple ecosystem.

### Question 2

#### A Put (✓) or (✗) in front of the following and correct the wrong ones :

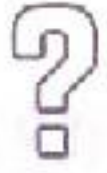
1. Water and ammonia are polar compounds. ( )
2. The atomic size decreases by increasing the atomic number in the same group. ( )
3. The first discovered fossil of mammoth was found preserved in amber. ( )
4. Destroying the habitat is one of the factors that causes extinction. ( )

#### B Choose the correct answer :

1. Fossils are often found in ..... rocks.
  - a. volcanic
  - b. sedimentary
  - c. metamorphic
  - d. igneous
2. .... is considered from halogens.
  - a. Na
  - b. Cl
  - c. He
  - d. Ca
3. The scientist ..... discovered the main energy levels.
  - a. Bohr
  - b. Mendeleev
  - c. Moseley
  - d. Hofmann

#### C Calculate the temperature at the top of a mountain. If you know that the temperature at its foot is 25°C and its height is 2 km.





### Question 3

**A Write the scientific term :**

1. Charged layer which reflects radio waves.
2. The continuous increase in the average temperature of the Earth's near surface air.
3. Dying out all members of species of living organisms.
4. The ability of the atom in a covalent molecule to attract the electrons of the chemical bond towards itself.

**B Correct the underlined words :**

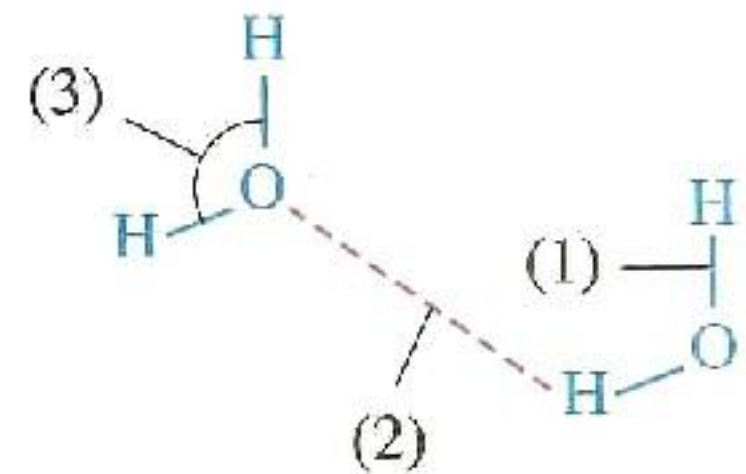
1. Troposphere is the coldest atmospheric layer.
2. Quagga is from the most famous extinct species in the old times.
3. The measuring unit of ozone degree is kilometer.

**C Mention one use for : Radioactive cobalt 60**

### Question 4

**A From the opposite figure, answer the following questions :**

1. What is the type of bond (1) & (2) ?
2. What is the measure of angle (3) ?
3. Which of the two bonds is stronger and which one is responsible for the abnormality properties of water ?



**B Give reasons for :**

1. Stop manufacturing of concorde aeroplanes.
2. Cesium is the most active metal in the modern periodic table.
3. El-Mokattam mountain was apart of a sea floor more than 35 million years ago.

**C Complete the following equation :**



## 7 Giza Governorate

### Dokki Educational Zone

Answer the following questions :

### Question 1

**A Choose the correct answer :**

1. Ozone layer absorbs ..... ultraviolet radiation.

a. far                      b. medium                      c. near                      d. all



## Part 3

2. .... is used to measure the possible day weather.  
a. Aneroid                      b. Barometer                      c. Altimeter                      d. Compass
3. There is ..... bond between oxygen atom and hydrogen atom in water molecules.  
a. hydrogen                      b. single covalent                      c. double covalent                      d. metallic
4. .... is an example of fossils that carries external details of old living organism.  
a. Ammonite                      b. Trilobite                      c. Fern cast                      d. Amber

### B Give an example for :

1. A negative effect of global warming.
2. A metal more active than sodium.
3. A gas pollutes ozone layer.

### C Calculate the atomic number of element (X) that lies in zero group and the third period.

## Question 2

### A Complete the following :

1. .... rays have chemical effect, while .... rays have thermal effect.
2. In the modern periodic table, elements are arranged according to ..... and .....
3. Archaeopteryx is a link between ..... and .....
4. During water electrolysis, the volume of the gas that evolves at anode is ..... the volume of the gas that evolves at cathode.

### B Correct the underlined words :

1. Biological pollution causes separation of the dissolved oxygen from water.
2. Amber fossil was formed when insect covered with snow.
3. Atmospheric pressure is measured in Dobson unit.

### C Give a reason for :

The dead animals must be buried in a suitable medium to form fossils.

## Question 3

### A Write the scientific term :

1. Covalent compounds in which the difference in electronegativity between its elements is relatively high.
2. Safe areas established to protect endangered species in their homeland.
3. Block that includes alkali metals.
4. Charged layer in the atmosphere that reflects radio waves.




**B Match :**

(A)	(B)
1. Cobalt 60	a. causes global warming.
2. Methane gas	b. indicate warm shallow sea environment.
3. Coral fossils	c. is used to preserve food.
	d. indicate rainy forest environment.

**C Show by equation :**

Dissolving carbon dioxide in water.

**Question 4**
**A Put (✓) or (✗) and correct the wrong ones :**

1. Each period in the modern periodic table ends with alkali metal. ( )
2. Pilots prefer to fly their planes in the lower part of mesosphere. ( )
3. Overhunting is a human activity that protects living organisms from extinction. ( )
4. Transition elements are located in the middle of modern periodic table. ( )

**B Cross the odd word out :**

1. Radiolaria – Microfossils – Foraminifera – Trilobite.
2. Troposphere – Stratopause – Mesosphere – Thermosphere.
3. Dinosaur – Ibis bird – Dodo bird – Mammoth.

**C If the temperature at sea level is 30°C what is the temperature at the top of a mountain whose height is 8 km.**
**8**
**Giza Governorate**
**Omrania Educational Zone**

Answer the following questions :

**Question 1**
**A Complete the following sentences :**

1. The normal atmospheric pressure at the sea level is ..... millibar.
2. Archaeopteryx is a link between ..... and .....
3. From the greenhouse gases is .....
4. The atomic number of the element that lies in second period and group (3A) is .....

**B Locate the position (period and group) , block and type of the following elements :**

1.  $_{10}\text{Ne}$

2.  $_{17}\text{Cl}$

3.  $_{12}\text{Mg}$



## Part 3

**C** Write the chemical equation of :

### Dissolving magnesium oxide in water.

## Question 2

**A Write the scientific term :**

1. The gas that evolves at the cathode of Hofmann's voltameter.
2. A phenomenon looks like colorful light curtains seen in the two poles.
3. A kind of oxides results from dissolving of metal oxides in water.
4. Safe places to protect the endangered species.

**B** Cross the odd word out :

1. Sodium – Cesium – Chlorine – Lithium.
2. Altimeter – Barometer – Aneroid – Hofmann's voltameter.
3. Panda bear – Ibis bird – Quagga – Bald eagle.

**C** Calculate the height of a mountain if the temperature at its base is  $25^{\circ}\text{C}$  and at its top is  $(-14^{\circ}\text{C})$ .

### Question 3

**A** Choose the correct answer :

- The charged cosmic radiations are dispersed (scattered) in the ..... layer.  
a. troposphere                      b. stratosphere                      c. ionosphere
- The fossils that indicate the environment was a hot and rainy tropical environment are ..... fossils.  
a. nummulites                      b. ferns                      c. amber
- The element which has the properties of both metal and non-metal is .....  
a. Si                      b. K                      c. F
- ..... is an example of microfossils.  
a. Mammoth                      b. Foraminifera                      c. Coral

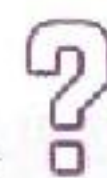
**B** Put (✓) or (✗) :

1. In the same group, the element which has the largest atomic size lies in group (7A). ( )
2. The gas that results from burning fuel of ultrasound concorde airplanes is halon. ( )
3. Meteors are formed in mesospheric layer. ( )

**C** What is the importance of ...?

Liquefied nitrogen.





## Question 4

### A Correct the underlined words :

1. Moseley discovered the main energy levels.
2. The measuring unit of ozone degree is Km.
3. Petrified wood is considered from rocks.
4. Drinking water, which contains high ratio of mercury leads to liver cancer.

### B Give reasons for :

1. The dodo bird is an easy target to hunt.
2. The lower part of stratosphere is suitable for flying planes.
3. Sodium is kept under the surface of kerosene.

### C Complete the following equation :



9

Giza Governorate

6<sup>th</sup> of October Educational Zone

Answer the following questions :

## Question 1

### A Complete the following sentences :

1. Eating fish containing high ratio of lead causes the death of ..... cells.
2. Normal atmospheric pressure equals ..... mb at sea level.
3. .... is an example of traces fossils.
4. When sodium reacts with water, ..... gas evolves.

### B Complete using the following words :

(Stratosphere – Sodium – Mesosphere –  $_{10}\text{Ne}$  – Cesium)

1. .... locates in group zero.
2. .... is the coldest layer of atmosphere.
3. .... is the most active alkali metal.

### C Complete with the suitable word :

The atomic number indicates the number of .....

## Question 2

### A Choose the correct answer :

1. .... is used in food preservation.
  - a. Cobalt 60
  - b. Sodium
  - c. Liquefied nitrogen
  - d. Silicon



## Part 3

2. Ozone layer exists in the ..... layer.
  - a. troposphere
  - b. stratosphere
  - c. exosphere
  - d. mesosphere
3. Complete fossils of mammoth are found preserved in .....
  - a. metamorphic rocks.
  - b. amber.
  - c. snow.
  - d. igneous rocks.
4. Metal oxides are ..... oxides.
  - a. acidic
  - b. basic
  - c. amphoteric
  - d. neutral

### B Cross the odd word out and mention what the rest has in common :

1. Blindness / Bilharzia / Typhoid / Hepatitis.
2.  $\text{CO}_2$  /  $\text{O}_2$  /  $\text{CFC}_s$  /  $\text{CH}_4$  /  $\text{N}_2\text{O}$
3. K / Na /  $\text{O}_2$  / Li

### C Give a reason for : Dodo bird is an easy target for hunters.

## Question 3

### A Write the scientific term :

1. Elements that have both properties of metals and nonmetals.
2. A gaseous envelope that surrounds Earth and rotates with it.
3. The death of all members of species of living organisms.
4. The ability of an atom in the covalent molecule to attract the bond electrons towards itself.

### B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Rutherford	a. discovered the main energy levels of the atom.
2. Aurora	b. is a unit used to measure the thickness of ozone layer.
3. Bohr	c. discovered that the nucleus contains positive protons.
	d. is a phenomenon appears as brightly colored curtains at the two poles.

### C What happens in the following ...?

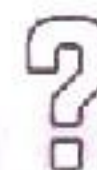
Drinking water contains high ratio of mercury.

## Question 4

### A Correct the underlined words :

1. Each period ends with a metal.
2. Troposphere is the hottest atmospheric layer.
3. Mold is a replica of the external details of structure of an old living organism.
4. Global warming phenomenon is the continuous decrease in the average temperature of the air near Earth's surface.





**B Give an example of :**

1. Polar compound.
2. Harmful rays.
3. Remains fossil.

**C Complete :**

Media which may preserve fossils from decomposition are ..... and .....

**10 Alexandria Governorate**

**El-Agami Educational Zone**

Answer the following questions :

**Question 1**

**A Write the scientific term of the following :**

1. Elements that have properties of both metals and nonmetals.
2. Weak electrostatic attraction between the molecules of polar compounds.
3. Increase in the average temperature in the Earth's near surface air.
4. Traces and remains of old living organisms that preserved in sedimentary rocks.

**B Complete the following :**

1. The new number of group (7A) is ..... and the new number of group zero is .....
2. During water electrolysis by using Hofmann's voltameter, ..... gas evolved at anode and ..... gas evolved at cathode.
3. From pollutants of ozone layer are ..... that are used in cooling sets and ..... that is used as insecticide to preserve agricultural crops.

**C From the opposite figure, complete :**

1. The name of this group is .....
2. The atomic size of (K) is ..... than that of (Na).

Lithium
<b>Li</b>
3
Sodium
<b>Na</b>
11
Potassium
<b>K</b>
19
Rubidium
<b>Rb</b>
37
Cesium
<b>Cs</b>
55

**Question 2**

**A Choose the correct answer :**

1. The scientist who discovered the positive charged protons inside the nucleus is .....
  - a. Bohr.
  - b. Mosley.
  - c. Mendeleev.
  - d. Rutherford.
2. The element that has the same properties of  $_{17}\text{Cl}$  is .....
  - a.  $_{11}\text{Na}$
  - b.  $_{12}\text{Mg}$
  - c.  $_{9}\text{F}$
  - d.  $_{19}\text{K}$
3. The measuring unit of degree of ozone in nature is .....
  - a. picometre.
  - b. dobson.
  - c. gm.
  - d.  $\text{cm}^3$
4. From recent extinct birds is .....
  - a. dodo bird.
  - b. bald eagle.
  - c. ibis bird.
  - d. quagga.



## Part 3

### B Choose the odd word out :

1. Na – Cl – Br – F
2.  $O_2$  –  $N_2O$  –  $CH_4$  –  $CO_2$
3. Bilharzia – Typhoid – Influenza – Hepatitis.

### C Give a reason for :

The complicated ecosystem is not affected by absence of one member.

## Question 3

### A Put (✓) or (✗) :

1. Yellowstone protectorate protects panda bear from extinction. ( )
2. Van-Allen belts surrounding ionosphere layer. ( )
3. The solid halogen is bromine. ( )
4. The biggest element in atomic size lies in group (7A). ( )

### B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. The number of elements in Mendeleev's table is .....	a. 13
2. The atomic number of the inert gas that exists in period (3) is .....	b. 118
	c. 67
3. The thickness of troposphere layer is ..... km.	d. 18

### C Write the balanced chemical equation of the following reaction :

Magnesium with dilute hydrochloric acid.

## Question 4

### A Correct the underlined words :

1. Mendeleev put inert gases in zero group.
2. All medium ultraviolet radiation absorbed by ozone layer.
3. Altimeter is used to determine the possible day weather.
4. Nummulite fossils indicate that the environment was clear, warm and shallow seas.

### B What happens when ...?

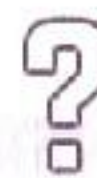
1. Drinking water that is stored in plastic bottles for long time.
2. Increasing the ratio of greenhouse gases in the atmosphere.
3. The resinous matter that is secreted from pine trees in old geologic ages was solidified on the insect.

### C From the opposite figure, complete :

The name of this fossil is ..... and its type is .....







## 11 Alexandria Governorate

## Borg El-Arab Educational Zone

Answer the following questions :

### Question 1

**A** Complete the following sentences :

1. During the chemical reaction, metal atom tends to ..... electrons and changes into .....
2. The hottest layer in the atmosphere is ....., while the coldest layer in the atmospheric envelope is .....
3. Most of weather features occur in ..... layer, whereas satellites swim through the ..... layer.
4. Fossils are used in ..... exploration and determining the age of .....

**B** Correct the underlined words :

1. Pure water has an acidic effect on both of litmus paper.
2. Metallic oxides are called acidic oxides.
3. Ultraviolet radiation has a thermal effect.

**C** Mention the difference between simple and complicated ecosystems.

### Question 2

**A** Write the scientific term :

1. Charged layer reflects radio waves.
2. The curved lines that join the points of equal pressure in maps.
3. The ability of the atom in a covalent compound to attract the electrons of chemical bond to itself.
4. Safe areas established to protect endangered species in their homeland.

**B** Cross the odd word out :

1. Fluorine – Bromine – Boron – Iodine.
2. Dodo bird – Quagga – Bald eagle – Dinosaur.
3. CFC<sub>s</sub> – Oxygen – Methane gas – Nitrous oxide.

**C** What happens when reacting chlorine with potassium bromide (write the equation) ?

### Question 3

**A** Put (✓) or (✗) :

1. Lanthanides and actinides are found in f-block.

( )



## Part 3

2. Fossils are found in igneous rocks. ( )
3. The bond between water molecules is hydrogen bond. ( )
4. Eating food with high concentration of arsenic causes blindness. ( )

### B Give an example for :

1. A complete body fossil.
2. A pollutant of ozone layer.
3. A metalloid.

### C If the temperature at sea level is $24.5^{\circ}\text{C}$ , find the temperature at the top of troposphere layer if its thickness is 13 kilometer.

## Question 4

### A Choose the correct answer :

1. The electronic configuration of magnesium ion ( $\text{Mg}^{+2}$ ) is similar to all the following, except .....  
a.  $\text{Na}^{+}$                       b.  $_{10}\text{Ne}$                       c.  $\text{Al}^{+3}$                       d.  $_{18}\text{Ar}$
2. All of the following are natural disasters, except .....  
a. floods.                      b. volcanoes.                      c. drought.                      d. global warming.
3. Eye cornea is preserved under the surface of liquefied .....  
a. sodium.                      b. hydrogen.                      c. nitrogen.                      d. oxygen.
4. A type of ultraviolet rays that is absorbed completely in ozone layer is ..... UV.  
a. far                      b. near                      c. medium                      d. thermal

### B Give reasons for :

1. Elements of group (1A) are known as alkali metals.
2. The lower part of stratosphere is suitable for flying planes.
3. Although sugar is a covalent compound, it dissolves in water.

### C Find the atomic number of each of the following :

1. An element exists in period (3) and group (7A).
2. An element exists in period (2) and group zero.

## 12 Qalyoubia Governorate

## Banha Educational Zone

Answer the following questions :

## Question 1

### A Write the scientific term :

1. The number of positively charged particles found inside the nucleus of the atom.
2. The alkali metal which has largest atomic size.





- The atmospheric layer which protects the Earth from celestial rocky masses.
- The path of energy that transfers from a living organism to another.

**B Mention an example for :**

- A halogen prepared artificially.
- A metalloid (semi-metal) used in making electronic devices.
- A covalent compound dissolves in water.

**C Mention the importance of :**

Litmus solution.

## Question 2

**A Choose the correct answer :**

- The number of elements that is found in the Earth's crust in the modern periodic table is ..... elements.  
a. 92                      b. 118                      c. 26                      d. 67
- The atomic number for the element (X) that locates in second period and combines with oxygen to form a compound ( $X_2O$ ) is .....  
a. 2                      b. 4                      c. 9                      d. 3
- The temperature at the top of stratosphere equals .....  
a.  $-90^\circ\text{C}$ .                      b.  $-60^\circ\text{C}$ .                      c.  $0^\circ\text{C}$ .                      d.  $1200^\circ\text{C}$ .
- Complete body fossil of mammoth is found preserved in .....  
a. snow.                      b. ocean.                      c. amber.                      d. igneous rocks.

**B Cross the odd word out, then write the name of the rest :**

- Typhoid – Hepatitis – Blindness – Bilharzia.
- ${}_8\text{O}^{-2}$  –  ${}_7\text{N}^{-3}$  –  ${}_5\text{B}^{+3}$  –  ${}_{12}\text{Mg}^{+2}$
- Methyl bromide gas – Freon – Nitrogen oxides – Water vapour.

**C Arrange the following fossils according to first appearance on life stage :**

Crocodiles – Trilobite – Cast fossil of fish – Mammoth.

## Question 3

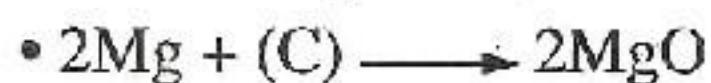
**A Complete the following sentences :**

- Transition elements are located in the ..... of the modern periodic table in ..... block.
- In Hofmann's voltameter, oxygen gas evolves at ....., while hydrogen gas evolves at .....
- If ozone degree at an area equals 225 Dobson, so the percentage (ratio) of erosion in this area will be ..... %
- Fossils are used in ..... exploration and determining the age of .....



## Part 3

**B** From the following equations :



1. Write the name for (A) , (B) & (C) and chemical formula for (A).
2. How can you differentiate between (B) & (C) ?

**C** Mention one difference between :

1. Troposphere and mesosphere. (according to the temperature at the end of each of them)
2. s-block and p-block. (according to the number of groups)

## Question 4

**A** Correct the underlined words in each of the following :

1. Boiling point of liquefied nitrogen is (78°C).
2. Wavelength of near ultraviolet rays is 280 : 315 nanometre.
3. Altimeter is a device used to determine the possible day weather.
4. Ammonite fossil represents an example of fossils of the complete body.

**B** Give reasons for :

1. The presence of hydrogen bond between water molecules.
2. Occurrence of all weather features in troposphere layer.
3. Desert ecosystem are strongly affected by absence of one of its species.

**C** If you know that the temperature at point at the middle of a mountain is  $(-2^{\circ}\text{C})$ , while the temperature at its foot is  $(24^{\circ}\text{C})$ , calculate the height of the mountain.

## 13 Sharkia Governorate

## Science Inspectorate

**Answer the following questions :**

## Question 1

**A Choose the correct answer :**

- The greatest density of water is at temperature .....
  - 100°C.
  - 4°C.
  - zero°C.
- The largest element in atomic size is .....
  - fluorine.
  - cesium.
  - helium.
- Atmospheric pressure at the end of the troposphere is ..... millibar.
  - 100
  - 1
  - 0.01
- Among the extinct birds is .....
  - quagga.
  - dodo.
  - ibis.





**B Write the word that differs from the others :**

1. Sodium – Chlorine – Fluorine – Iodine.
2. Typhoid – Hepatitis – Skin cancer – Bilharzia.
3. Methyl bromide gas – Nitrogen oxides – Oxygen – Halons.

**C Locate the position of  $_{11}\text{Na}$  and  $_{17}\text{Cl}$  in the modern periodic table.**

**Question 2**

**A Complete the following sentences :**

1. Halogens are located in group ..... that belongs to the ..... block.
2.  $\text{Mg} + 2\text{HCl} \xrightarrow{\text{dil.}} \text{.....} + \text{.....}$
3. Meteors are formed at ..... layer and radio waves are reflected from the ..... layer.
4. .... and ..... are microfossils whose presence in exploratory wells indicates the presence of petroleum.

**B Mention the name of the scientist that suits each statement :**

(Rutherford – Van-Allen – Moseley – Mendeleev – Dobson – Bohr)

1. He predicted the discovery of new elements and determined the values of their atomic weights.
2. He assumed that the thickness of the ozone in S.T.P = 3 mm.
3. He discovered the positive protons in the nucleus.

**C Mention the type of the following fossils :**

1. Mammoth fossil,
2. Dinosaur's egg fossil.

**Question 3**

**A Write the scientific term :**

1. The ability of the atom in a covalent molecule to attract the electrons of the bond towards itself.
2. The group of elements on the far left side of the modern periodic table that reacts with water and gives alkaline solutions.
3. The continuous increase in the average temperature of the air near the Earth's surface.
4. Fossils of organisms that lived for short periods of time and then became extinct and never appeared again.

**B Correct the underlined words :**

1. Metals react with group (7A) and form alkalis.
2. Liquefied nitrogen is used in the manufacture of electronic devices.
3. Airplanes fly in the lower part of the thermosphere.



## Part 3

- C** If the sum of oxygen and hydrogen gases resulting from the electrolysis of water in Hofmann's voltameter =  $60 \text{ cm}^3$ , calculate the volume of oxygen gas and the volume of hydrogen gas.

### Question 4

- A** Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Pollution resulting from the discharge of sewage and factory water into rivers.	a. Ras Mohamed
2. The device in airplanes used for altitude determination.	b. Chemical
3. A natural protectorate in Egypt.	c. Aneroid
4. A fossil indicates that the area in which it is located was warm, clear and shallow seas in ancient times.	d. Coral
	e. Altimeter
	f. Panda

- B** Put (✓) in front of the correct statements and (✗) in front of the incorrect ones :

1. The stratosphere layer contains 50% water vapour. ( )
2. The bonds between water molecules are hydrogen bonds. ( )
3. The green color on ozone maps indicates severe erosion. ( )

- C** Explain the difference between cast fossil and a fossil that indicates traces.

## 14 Menofia Governorate

Shebeen El-Koum Educational Zone

Answer the following questions :

### Question 1

- A** Complete the following sentences :

1. An element, its nucleus has two protons, so it locates in ..... group and ..... block in the modern periodic table.
2. The atomic size determined by knowing the ..... and its measuring unit is .....
3. The atmospheric envelope consists of layers according to changing occur in ..... and .....
4. .... is the first protectorate in Egypt.

- B** Put (✓) or (✗) :

1. The scientist Rutherford discovered the main energy levels of atom. ( )
2. Each period in the modern periodic table ends with a metalloid element. ( )
3. Meteors are formed in mesosphere layer but clouds are formed in troposphere. ( )



**C To whom are the following works belong :**

1. Discovering positive protons in the nucleus of the atom.
2. Discovering main energy levels in the atom.

**Question 2****A Choose the correct answer :**

1. The volume of certain amount of water becomes larger at temperature ..... °C.  
a. 40                      b. zero                      c. 20                      d. 4
2. The element which has atomic number equals (12) has the same properties of element which has atomic number equals .....  
a. 2                      b. 8                      c. 17                      d. 20
3. If the temperature at the top of a mountain is less than the temperature at its base by 26°C, then the height of the mountain equals ..... meter.  
a. 1000                      b. 3000                      c. 4000                      d. 2000
4. When sediments fill up the shell cavities and solidify, the ..... fossil is formed.  
a. solid mold                      b. empty mold                      c. trace                      d. cast

**B Write the scientific term for each of the following :**

1. An element which causes death of brain cells when its concentration increases in water.
2. Charged layer that reflects radio waves.
3. The gas which evolves above the cathode in Hofmann's voltameter during electrolysis of water.

**C Give a reason for :**

Not all known fossils are considered as index fossil.

**Question 3****A Correct the underlined words :**

1. Some basic oxides dissolve in water forming salts.
2. Molecule of halogen consists of one atom.
3. Medium ultraviolet radiation is absorbed by 10% in ozone layer.
4. Some insects were preserved completely in ammonites.

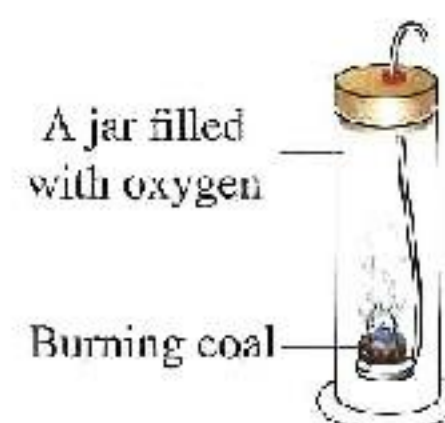
**B Cross the odd word out and link the rest in meaningful statements :**

1. Sodium – Lithium – Potassium – Chlorine.
2. Boron – Helium – Silicon – Arsenic.
3. Barometer – Aneroid – Thermometer – Altimeter.



## Part 3

- C** From the opposite figure what is the type of forming oxide ?  
Write the chemical equation of this reaction.



### Question 4

- A** Choose from column (B) what suits it in column (A) :

(A)	(B)
1. From covalent compounds which doesn't dissolve in water.	a. Van-Allen belts
2. Known as an ozonic atmospheric envelope.	b. quagga
3. Scattering cosmic rays.	c. oil
4. An extinct mammal animal.	d. stratosphere layer

- B** Give reasons for :

1. Water molecule is from polar molecules.
2. Occurrence of global warming phenomenon.
3. Mammoth fossil is considered from complete body fossils.

- C** What are the consequences of the following :

The absence of one type of species from environmental balanced desert.

## 15 Gharbia Governorate

Science Inspectorate

Answer the following questions :

### Question 1

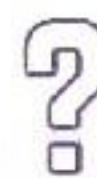
- A** Complete the following sentences :

1. The modern number of group (2B) is .....
2. Some metals react with dilute acids giving ..... and hydrogen gas evolves.
3. The atmosphere permits the passage of ..... and short-waved rays coming from the Sun to be absorbed by Earth in the greenhouse.
4. There is ..... fossils in the limestone rocks, which form El-Mokattam mountain.

- B** Correct the underlined words :

1. Sodium is the lowest metallic element in group (1A).
2. The high boiling point of water is due to the presence of double covalent bonds between its molecules.
3. The atmospheric pressure in stratosphere layer decreases as we go up until it becomes 100 mb.





**C** The opposite figure represents the reaction of a piece of sodium with water :

1. Write the equation of the reaction.
2. How can you detect the evolved gas ?



## Question 2

**A** Write the scientific term of each of the following sentences :

1. Monovalent elements exist in p-block in the periodic table.
2. A type of water pollution, which causes the death of marine creatures due to the separation of the dissolved oxygen in water.
3. A molecule is formed by combining an atom of an element with a molecule of the same element.
4. A protectorate in the USA is established to protect the grey bear from extinction.

**B** Choose the odd word out, then write the suitable name for others :

1.  $\text{CO}_2$  –  $\text{MgO}$  –  $\text{Na}_2\text{O}$  –  $\text{CaO}$
2. s – k – d – f – p
3. Methyl bromide – Carbon dioxide – Water vapour – Methane gas.

**C** What is the difference between ...?

A mold and a trace.

## Question 3

**A** Put (✓) or (✗) and correct the wrong ones :

1. Magnesium and potassium are kept under the surface of kerosene. ( )
2. Sulphuric acid is produced when carbon dioxide gas dissolves in water. ( )
3. The thickness of troposphere layer is 37 kilometres. ( )
4. Archaeopteryx represents a link between reptiles and birds. ( )

**B** Choose the correct answer :

1. One Dobson unit is defined as .....  
 a. 3 mm.                      b. 0.1 mm.                      c. 0.01 mm.                      d. 0.001 mm.
2. .... of the mass of air is located up to 16 km height above the sea level.  
 a. 10 %                      b. 40 %                      c. 50 %                      d. 90 %
3. If the summation of the volume of the two evolved gases at the two poles of Hofmann's voltameter is  $60 \text{ cm}^3$ , so the volume of hydrogen and oxygen gases respectively is .....  
 a.  $20 \text{ cm}^3$ ,  $40 \text{ cm}^3$ .                      b.  $40 \text{ cm}^3$ ,  $20 \text{ cm}^3$ .  
 c.  $30 \text{ cm}^3$ ,  $30 \text{ cm}^3$ .                      d.  $10 \text{ cm}^3$ ,  $50 \text{ cm}^3$ .



## Part 3

### C What happens when ...?

Increase in the ratio of arsenic in drinking water.

### Question 4

#### A Answer the following questions :

1. a. What is the location of this element in the modern periodic table ?

b. This element is located in the same group with ..... in the modern periodic table.

a.  ${}_5\text{B}$

b.  ${}_{16}\text{S}$

c.  ${}_{19}\text{K}$

d.  ${}_{10}\text{Ne}$

2. Calculate the percentage of erosion in ozone layer in a certain area, knowing that ozone degree at this area is 255 dobson.

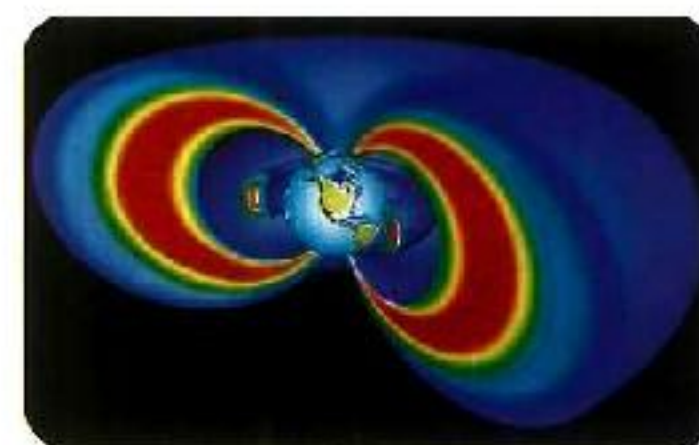
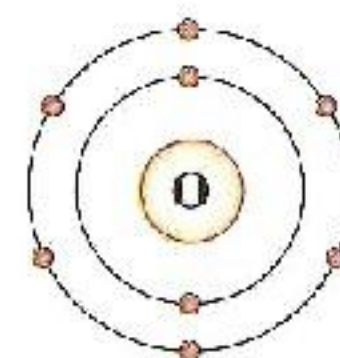
3. a. How is amber produced ?

b. What is the type of organisms that is preserved in amber ?

4. The opposite figure represents the two magnetic belts that surround the Earth planet :

a. What is their scientific name ?

b. Where are they located ?



#### B Give reasons for :

1. Aluminium oxide is considered as an amphoteric oxide.

2. Mesosphere layer is highly rarefied.

3. Nummulites fossils are considered as index fossils.

### C Calculate the height of a mountain if the temperature at its foot is $30^{\circ}\text{C}$ and at its top is $(-6^{\circ}\text{C})$ .

**16** Dakahlia Governorate

Science Inspectorate

Answer the following questions :

### Question 1

#### A Choose the correct answer :

1. The element which locates in group (18) and in first period, its atomic number = .....

a. 18

b. 10

c. 2

d. 1

2. In period three in the modern periodic table, ..... increase from left to right.

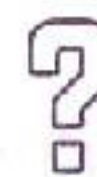
a. atomic number and metallic property

b. atomic size and metallic property

c. atomic number and nonmetallic property

d. atomic size and nonmetallic property





3. The temperature at the middle of a mountain is ( $10^{\circ}\text{C}$ ) and at its top is ( $-3^{\circ}\text{C}$ ), so the height of the mountain equals ..... km.

- a. 2                      b. 4                      c. 6                      d. 8

4. .... is an example of microfossils.

- a. Radiolaria              b. Amber              c. Trilobite              d. Ferns

**B Fill in the blanks after copying it in your answer sheet :**

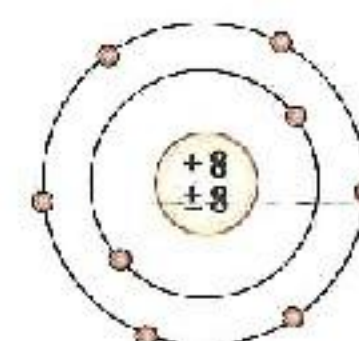
1. Elements of d-block are known as ..... and they start to appear from period .....

2.  $\text{Mg} + 2\text{HCl} \xrightarrow{\text{dil.}}$  ..... + .....

3. Satellites float in ..... layer, while meteors are formed in ..... layer.

**C From the opposite figure :**

- What is the block of this element ?
- Conclude the atomic number of the element which follows it in the same group.



**Question 2**

**A Put (✓) or (✗) :**

- Density of sodium is lower than density of lithium and higher than density of cesium. ( )
- Liquefied nitrogen is used in the preservation of cornea of the eye and its boiling point is  $196^{\circ}\text{C}$ . ( )
- If the atmospheric pressure at the top of a mountain is 710 mbar, so the pressure at its foot is about 1000 mbar. ( )
- Desert is a complicated ecosystem which is not affected by the absence of one of its species. ( )

**B Cross the odd word out and write the related of other words :**

- $_{15}\text{P}^{-3}$  –  $_{7}\text{N}^{-3}$  –  $_{19}\text{K}^{+}$  –  $_{20}\text{Ca}^{+2}$
- Fluorine – Chlorine – Hydrogen – Iodine.
- Temperature at its top  $0^{\circ}\text{C}$  – Air moves horizontally – Contains ozone layer – Contains (99%) of water vapour.

**C Describe the environment where the following fossils lived :**

- Coral fossils.
- Nummulite fossils.

**Question 3**

**A Write the scientific term :**

- A group of elements starts from group (3A) and ends with zero group.
- The bonds that cause abnormal properties of water.
- Apparatus is used in airplanes to measure the elevation of navigation.
- It contains complete whales skeleton fossils 40 million years ago.



## Part 3

- B** Select from column (B) the option that best corresponds to column (A) after copying it in your answer sheet :

(A)	(B)
1. Discovered the main energy levels of the atom.	a. Methyl bromide
2. Discharging factories wastes and sewage in seas and rivers.	b. Bohr
3. Pollutants of ozone layer.	c. Rutherford
	d. Carbon dioxide
	e. Chemical pollution
	f. Biological pollution



- What is the chemical name of (M) and (R) ?
- What is the name of the gas X and how can you test it ?

### Question 4

- A** Specify on differentiation between :

- ${}_{19}\text{K}$  and  ${}_{15}\text{P}$  (concerning electronic configuration)
- Troposphere and mesosphere. (according to its top temperature)
- Ozone and oxygen. (concerning number of atoms)
- Quagga and bald eagle. (according to the type)

- B** What happens when ...?

- Passing an electric current in acidified water (show by chemical equation).
- The rate of greenhouse gases increases in troposphere layer.
- The frog is absent from the following food chain.  
(green plant  $\longrightarrow$  locust  $\longrightarrow$  frog  $\longrightarrow$  snake  $\longrightarrow$  owl).

- C** Give an example for each of the following :

- A petrified fossil.
- An organism represents a link between reptiles and birds.

## 17 Ismailia Governorate

Science Inspectorate

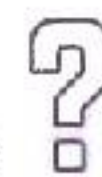
Answer the following questions :

### Question 1

- A** Complete the following sentences :

- Transition elements start to appear from period number ..... and they consist of ..... groups.





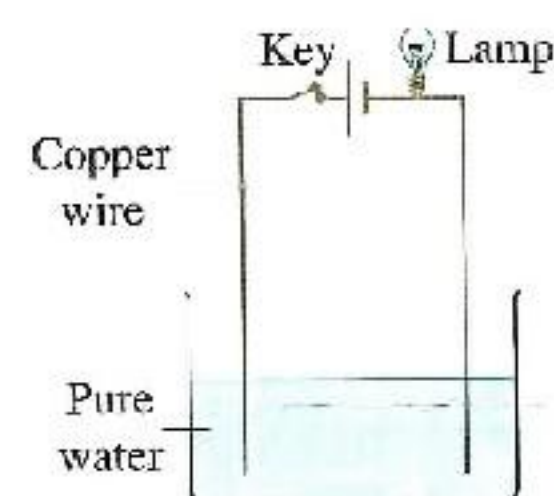
2. Radioactive cobalt 60 is used in ....., while liquefied nitrogen is used in .....
3. Ultraviolet radiation has ..... effect, while infrared radiation has ..... effect.
4. Archaeopteryx fossil is a link between ..... and .....

**B Give one example for each of the following :**

1. An Element causes death of brain cells.
2. A basic oxide.
3. A greenhouse gas.

**C From the opposite electric circuit fill the space :**

The lamp will ..... (illuminate – not illuminate)  
because pure water is .....



**Question 2**

**A Write the scientific term :**

1. Elements that have the properties of metals and nonmetals.
2. The ion which carries a number of charges equals to the number of gained electrons.
3. A charged layer reflects radio waves and found in upper part of thermosphere layer.
4. The death of all members of species of living organisms.

**B Choose from column (B) what suits it in column (A) :**

(A)	(B)
1. Hofmann's voltameter is used in	a. scatter the harmful cosmic radiation.
2. Silicon slides are used in	b. electrolysis of acidified water.
3. Van-Allen Belts	c. making electronic devices.
	d. determine the possible day weather.

**C Look at the figures of these land animals, then mention the name of each one and classify it extinct or endangered :**



Figure (1)



Figure (2)



### Question **3**

**A Choose the correct answer :**

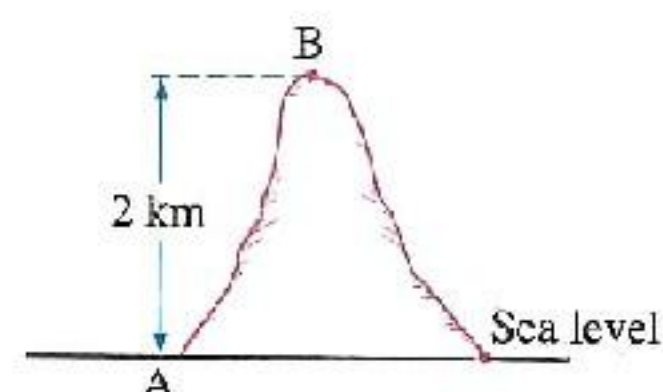
- The scientist ..... discovered that the nucleus of atom contains positively charged protons.  
a. Bohr                      b. Rutherford                      c. Moseley                      d. Newton
- Non-metal oxides are called ..... oxides.  
a. acidic                      b. amphoteric                      c. basic                      d. salty
- Ozone layer is found in ..... layer.  
a. troposphere                      b. mesosphere                      c. thermosphere                      d. stratosphere
- Complete body fossils of insects are found preserved in .....  
a. ammonites.                      b. amber.                      c. air.                      d. snow.

**B Correct the underlined words :**

- There is covalent bonds between water molecules.
- The element which has an atomic number equals to (18) is a metallic element.
- Atmospheric pressure is measured by a unit called meter.

**C Problem :**

From the opposite figure calculate the temperature at the top of the mountain (B) if you know that the temperature at the sea level is 20°C.



### Question **4**

**A Cross the odd word out and write the scientific term of the rest of words :**

- Lithium – Sodium – Helium – Potassium.
- Freon – Methyl bromide gas – Oxygen – Nitrogen oxides.
- Barometer – Aneroid – Thermometer – Altimeter.
- Dinosaur's tooth – Dinosaur's egg – Cast of fish – Petrified wood.

**B Compare between each of the following :**

- Alkali metals and halogens. (according to the block)
- Troposphere and stratosphere. (according to the temperature at the top)
- Ferns fossils and coral fossils.

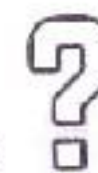
**C Study the opposite figure, then fill the spaces :**

In the absence of frogs :

- Snakes ..... due to food shortage.
- Numbers of locusts will ..... and disturb .....







## 18 Port Said Governorate

## Port Said Educational Zone

Answer the following questions :

**A Choose the correct answer :**

- The element used in a liquid state to obtain the vapour energy required to generate electricity is the .....  
a. Mg                      b. Na                      c. Cu                      d. Pb
- An example of a complete body fossil is the .....  
a. mammoth.              b. dinosaur tooth.              c. ammonite.              d. coral.
- Chlorine replaces ..... in potassium iodide solution.  
a. F                      b. Br                      c. S                      d. I
- Air pressure at the top of a mountain is ..... air pressure at the sea level.  
a. greater than              b. lower than              c. equal to              d. the double of
- The oxide which dissolves in water and forms an acidic solution is .....  
a. MgO                      b.  $\text{H}_2\text{CO}_3$                       c.  $\text{Na}_2\text{O}$                       d.  $\text{CO}_2$
- An example of the solid mold is the .....  
a. fish cast.              b. ammonite.              c. mammoth.              d. amber.
- The density of pure water at  $0^\circ\text{C}$   $\div$  its density at  $4^\circ\text{C}$  is ..... one.  
a. greater than              b. equal to              c. lower than              d. the double of
- The fern fossil is a/an ..... fossil.  
a. solid mold              b. petrified              c. empty mold              d. cast
- The scientist ..... discovered the main energy levels in the atom.  
a. Mendeleev              b. Moseley              c. Bohr              d. Rutherford
- The ..... layer plays an important role in wireless communication and broadcasting.  
a. troposphere              b. stratosphere              c. mesosphere              d. ionosphere
- Using water for cooling nuclear reactors produces ..... pollution.  
a. biological              b. thermal              c. chemical              d. radiant
- Archaeopteryx fossil links between .....  
a. fish and amphibians.              b. reptiles and birds.  
c. birds and mammals.              d. amphibians and reptiles.
- If the total volume of the two gases evolved at the two electrodes of Hofmann's voltameter is  $90\text{ cm}^3$ , the volume of the gas that burns with a pop sound will be .....  $\text{cm}^3$ .  
a. 90                      b. 60                      c. 30                      d. 20



## Part 3

14. If temperature at the sea level is  $30^{\circ}\text{C}$  and temperature at the top of a mountain is  $4^{\circ}\text{C}$ , the height of the mountain will be ..... km.  
a. 2                      b. 3                      c. 4                      d. 5
15. The atomic size is measured in the unit of .....  
a. atomic number.    b. picometre.            c. atomic radius.        d. valency.
16. The ..... protectorate contains skeletons of whales' fossils that are 40 million years old. -  
a. Wadi El-Nile        b. Wadi El-Raiyan        c. Wadi El-Natroun      d. Wadi El-Gedecd
17. The element which has the smallest atomic size is .....  
a.  $_{12}\text{Mg}$                 b.  $_{15}\text{P}$                     c.  $_{11}\text{Na}$                     d.  $_{17}\text{Cl}$
18. From living organisms that are threatened by extinction is the .....  
a. dodo bird.            b. quagga.                c. dinosaur.                d. ibis bird.
19. The scientist ..... discovered that the nucleus of the atom contains positively charged protons.  
a. Mendeleev            b. Moseley                c. Bohr                      d. Rutherford
20. Recent extinctions of living organisms are attributed to .....  
a. destruction of the original habitat.            b. toxic gases evolved from volcanoes.  
c. exposure of Earth to long ice age.            d. collision of meteors with Earth.
21. The number of electrons found in the ion of a divalent metal that is found in the fourth period is .....  
a. 20                      b. 18                      c. 10                      d. 2
22. From the examples of the complex ecosystems are the .....  
a. tropical forests.    b. deserts.                c. protectorates.            d. water ponds.
23. The properties of the element whose atomic number is 9 are similar to the properties of the element whose atomic number is.....  
a. 7                        b. 8                        c. 17                        d. 19
24. The ozone degree is measured in the unit of .....  
a. kilometre.            b. Dobson.                c. nanometre.            d.  $\text{mm}^3$ .
25. The gas which evolves when sodium reacts with water is .....  
a.  $\text{N}_2$                       b.  $\text{O}_2$                       c.  $\text{CO}_2$                       d.  $\text{H}_2$

### **B** Answer the following questions :

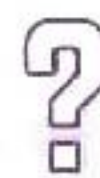
26. **What happens in case of ... ?** (explain using balanced chemical equation)

Burning of a piece of coal in oxygen.

27. **Replace by a scientific term :**

Compounds which result from the burning of fuels in the ultrasound concorde airplanes.





28. **Mention one example of** : a basic oxide which dissolves in water.

29. **Replace by a scientific term** :

Elements which have the properties of metals and non-metals.

30. **What happens in case of ... ?**

The altimeter stops working, while an airplane is flying in the atmosphere.

31. **Complete** : There are ..... bonds between water molecules  
and ..... bonds between its atoms.

32. **What is the importance of ... ?** Van-Allen belts.

33. **Find the atomic number of** : the element (Y) in the opposite figure.

34. **Give a reason for** : Mesosphere is the most vacuumed atmospheric layer.

35. **Give a reason for** : Alkali metals are kept under the surface of kerosene.

X
Y
Z
L

## 19 Minia Governorate

Deir Mawas Educational Zone

Answer the following questions :

### Question 1

**A Write the scientific term :**

1. Remains or traces of organisms that lived in the past and were preserved in sedimentary rocks.
2. Thinning or losing part of ozone layer above the south pole.
3. The first real periodic table for classifying elements.
4. A kind of water pollution, which arises from mixing animal and human wastes with water.

**B Write the name of the scientist who :**

1. Discovered that ionosphere is surrounded by two magnetic belts.
2. Discovered the main energy level.
3. Named the term of atomic number of an element on the number of positive protons in the nucleus.

**C Write one example for :**

1. Liquid halogen.

2. Basic oxide.

### Question 2

**A Complete the following sentences :**

1. The atoms of water molecule joined together by ..... bonds.
2. Satellites revolve in ..... layer.
3. .... is an extinct bird in the recent times.
4. Transition elements start from period ..... in the modern periodic table.



## Part 3

**B Match from the column (B) which is suitable to column (A) :**

(A)	(B)
1. Halons	a. preservation of cornea of eyes.
2. Liquefied nitrogen	b. the environment was clear warm shallow sea.
3. Coral fossils	c. they are used in extinguished fires.

**C Look at the opposite figure, then answer :**

1. What is the name of this animal ?
2. Does it from extinct or endangered species ?



### Question 3

**A Put (✓) or (✗) :**

1. Bar is used in measuring atomic size. ( )
2. Ras Mohamed protectorate is the first established protectorate in Egypt. ( )
3. Infrared radiation has chemical effect. ( )
4. The number of elements in the modern periodic table is 67 elements. ( )

**B Choose the odd word out :**

1. Potassium – Sodium – Argon – Cesium.
2. Tropopause – Stratopause – Mesopause – Troposphere.
3. Noisy pollution – Chemical pollution – Radiant pollution – Thermal pollution.

**C Complete the following chemical equations :**

1.  $\text{Cl}_2 + \dots \longrightarrow 2\text{NaCl} + \text{Br}_2$
2.  $\text{CO}_2 + \dots \longrightarrow \text{H}_2\text{CO}_3$

### Question 4

**A Correct the underlined words :**

1. Archaeopteryx is considered a link between reptiles and mammals.
2. Thermometer is used to determine the possible day weather based on atmospheric pressure.
3. CO<sub>2</sub> is from the greenhouse gases and pollutants of ozone layer.
4. An element its atomic number is 19, so it lies in group (7A).

**B Give reasons for the following :**

1. Water and ammonia are from polar compounds.
2. Stratosphere is called ozonic atmospheric envelope.
3. Petrified woods are considered as fossils although they look like rocks.





**C Compare between :**

Simple ecosystem and complicated ecosystem (according to giving one example of each).

**20**

**Luxor Governorate**

**Abu Bakr Official Language School**

Answer the following questions :

**Question 1**

**A Choose the correct answer :**

- Each period in the modern periodic table starts with a/an .....  
a. non-metal.      b. metal.      c. inert gas.      d. metalloid.
- In water molecule, there are ..... bonds between oxygen and hydrogen.  
a. single covalent      b. double covalent      c. ionic      d. hydrogen
- The normal atmospheric pressure is ..... millibar.  
a. 1.013      b. 1013.25      c. 760      d. 76
- ..... is from microfossils.  
a. Amber      b. Fern      c. Foraminifera      d. Archaeopteryx

**B Write one importance for each of the following :**

- Van-Allen belts.
- Liquefied nitrogen.
- Silicon.

**C Calculate the temperature at a point of height 2000 metres above sea level if the temperature at sea level is 33°C.**

**Question 2**

**A Correct the underlined words in the following statements :**

- According to fossil record, the first appeared vertebrates were birds.
- Bohr discovered that the nucleus contains positively charged protons.
- Fluorine is the strongest metal.
- When water freezes, its density increases.

**B Choose the odd word out, then write the scientific term of the others :**

- Halons – Nitrous oxide gas – CO<sub>2</sub> – Methane gas.
- Cast – Mold – Fossil record – Petrified wood.
- Ibis bird – Panda bear – Quagga – Bald eagle.



## Part 3

### C Complete the following chemical equations with balance :



### Question 3

#### A Write the scientific term :

1. Fossils that lived for a short period of time and had wide distribution.
2. Ability of an atom to attract the electrons of the bond towards itself.
3. The radioactive element that is used in food preservation.
4. A metal used in a liquid state for cooling nuclear reactors.

#### B Mention one example for each of the following :

1. A liquid halogen.
2. A trace fossil.
3. An endangered plant.

#### C Compare between :

Simple ecosystem and complicated ecosystem (according to alternatives and example).

### Question 4

#### A Complete the following sentences :

1. Increasing the concentration of ..... causes blindness, while increasing the concentration of ..... causes death of brain cells.
2. Most of weather phenomena occur in ....., while meteors burn in .....
3. Fossils are important in ..... determination and studying ..... of life.
4. Water is a good polar solvent for most of ..... and some of .....

#### B Put (✓) or (✗) :

1. Modern periodic table contains 7 groups and 18 periods. ( )
2. Ultraviolet rays have thermal effect, while infrared rays have chemical effect. ( )
3. Methyl bromide gas is used as chemical insecticide. ( )

#### C Give reasons for :

1. Petrified forests are named as wood mountain.
2. Pilots prefer to fly their planes in stratosphere.



حمل الآن

مجاناً وحصرياً

# امتحانات رقم (3)

## الترم الاول





# Final Examinations of Some Governorates



2023

1

**Cairo Governorate**

Al Bayan Language School

Answer the following questions :

## Question 1

**A** Complete the following sentences :

1. The highest temperature layer in the atmosphere is ..... , and the coldest one is .....
2. Mendeleev arranged the elements ascendingly according to ..... , while Moseley arranged them according to .....
3. Alkali metals are located in group ..... , while halogens are in group .....
4. Radioactive cobalt 60 is used in ..... , while liquefied nitrogen is used in .....

**B** Cross out the odd word, then write the name of the others :

1. Lithium – Sodium – Helium – Potassium.
2. Dodo bird – Quagga – Bald eagle – Mammoth.
3. Mesosphere – Thermosphere – Tropopause – Stratosphere.
4. Dinosaur's tooth – Dinosaur's egg – A cast for a shell – Petrified wood.

**C** What is meant by exosphere ?

## Question 2

**A** Write the scientific term of each of the following :

1. The continuous increase in the average temperature of the Earth's near-surface air.
2. Safe areas established to protect endangered species in their homeland.
3. Arrangement of metals in a descending order according to the degree of their chemical activity.
4. A weak electrostatic attraction that arises between the molecules of some polar compounds.

**B** Locate the following elements in the modern periodic table :

1.  ${}_{19}\text{K}$

2.  ${}_{17}\text{Cl}$

**C** A mountain with 3000 metre height, if the temperature at its foot is  $19.5^{\circ}\text{C}$ . Find the temperature at its top ? Are there a snow in its top ? Why ?







3. Element E is located in ..... block.
4. .... indicates the most active element.

**C** Give a reason for : stop producing Concorde aeroplanes.

## 2 Cairo Governorate

### El-Sahel Educational Zone

Answer the following questions :

### Question 1

**A** Choose the correct answer :

1. The elements of group (7A) are called .....  
 a. alkali metals.                      b. halogens.                      c. inert gases.
2. In the periodic table, the elements which are identical in properties lie in the same .....  
 a. period.                      b. group.                      c. energy level.
3. The hottest atmospheric layer is .....  
 a. troposphere.                      b. stratosphere.                      c. thermosphere.
4. From the endangered species is .....  
 a. Barbary sheep.                      b. the passenger pigeon.                      c. dinosaur.

**B** Complete the following sentences :

1. From pollutants of ozone layer are ..... and .....
2. The modern periodic table consists of ..... horizontal periods and ..... vertical groups.
3.  $\text{Mg} + 2\text{HCl} \xrightarrow{\text{dil.}}$  ..... + .....
4. The second layer in atmosphere is ..... , while the fourth layer is .....

**C** Locate the position of the following element in the periodic table :

$^{12}\text{Mg}$  (Group, Period and block).

### Question 2

**A** Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Bohr	a. is from halogens.
2. Chlorine	b. discovered the main energy levels of the atom.
3. Altimeter	c. is the fossil of complete body for insects.
4. Amber fossil	d. determines elevation above sea level in airplanes.



**B** Correct the underlined words :

1. Methane is an example of polar compound.
2. The mold is a copy of the external shape of the shell.
3. Satellites swim in mesosphere region.
4. Liquefied nitrogen is used in nuclear reactors.

**C** What happens when silica replaces wood material part by part of an old tree ?

**Question 3**

**A** Write the scientific term for each of the following :

1. Safe places that are specified to protect the endangered species in their natural environment.
2. The atmospheric layer that contains a certain amount of helium and hydrogen.
3. A chemical bond that exists between water molecules.
4. A type of water pollution causes typhoid and bilharzia.

**B** Mention one example for :

1. Element causes death of brain cells.
2. Acidic oxide.
3. A Greenhouse gase.
4. A chemical compound used in cooling.

**C** Give a reason for : water is a polar compound.

**Question 4**

**A** Cross out the odd word :

1. Lithium – Sodium – Potassium – Flourine.
2.  $\text{Na}_2\text{O}$  –  $\text{MgO}$  –  $\text{CO}_2$  –  $\text{K}_2\text{O}$
3. Freon – Methyl bromide gas – Oxygen – Nitrogen oxides.
4. Mammoth – Bald eagle – Dinosaur – Dodo bird.

**B** Put (✓) or (✗) :

1. Alkali metals are good conductors of heat and electricity. ( )
2. Mesosphere layer is the hottest layer in the atmosphere. ( )
3. Panda bear is an endangered animal. ( )
4. Lead causes cancer. ( )

**C** Mention one importance for fossils.





### 3 Cairo Governorate

Badr Language School

Answer the following questions :

#### Question 1

**A** Complete the sentences by using words between brackets :

(amber – Dobson – basic – acidic – bar – number – weight – snow)

1. Mendeleev arranged the element according to their atomic ....., while Moseley arranged them according to their atomic .....
2. Some insects' bodies were preserved completely in ....., while mammoth was preserved in .....
3. The measuring unit of atmospheric pressure is ..... while the degree of ozone is measured by ..... unit.
4. Carbon dioxide is ..... oxide, while magnesium oxide is ..... oxide.

**B** Write the scientific term :

1. Traces and remains of old living organisms are preserved in sedimentary rocks.
2. The ability of the atom in a covalent molecule to attract electrons of the bond toward itself.
3. A type of water pollution results from mixing wastes of human and animals with water.
4. A phenomenon of bright and colored curtains appear at north pole and south pole.

**C** Find the temperature at a point of height 2 km above sea level if the temperature at sea level is 20°C.

#### Question 2

**A** Correct the underlined words :

1. Methane gas is from pollutants of ozone layer.
2. Increasing in the concentration of lead element in water causes liver cancer.
3. Liquified sodium is used in preserving eye cornea.
4. Ammonites fossils are found in limestone rocks of El-Mokattam mountain.

**B** Choose the correct answer :

1. .... is from microfossils.
 

a. Corals	b. Foraminifera	c. Ferns	d. Nummulites
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2. All the following are greenhouse gases, except .....
 

a. CO <sub>2</sub>	b. O <sub>2</sub>	c. CH <sub>4</sub>	d. H <sub>2</sub> O
--------------------	-------------------	--------------------	---------------------
3. There are ..... bond between water molecules.
 

a. metallic	b. ionic	c. hydrogen	d. covalent
-------------	----------	-------------	-------------



4. When sodium reacts with water ..... gas is evolved.

a.  $N_2$

b.  $O_2$

c.  $H_2$

d.  $CO_2$

**C** Element (X) lies in the second period and zero group. Find its atomic number.

### Question 3

**A** Put (✓) or (✗) :

1. Pure water changes the colour of litmus solution into blue. ( )
2. The atomic size increases in the same group by increasing the atomic number. ( )
3. Mold carries the internal details of an old living organism. ( )
4. Meteors are formed in the mesosphere layer. ( )

**B** Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Aneroid is used to	a. scatter the harmful cosmic radiations.
2. Van Allen belts	b. electrolysis of acidified water.
3. Hoffman voltmeter is used in	c. determine the possible day weather.
4. Radioactive cobalt $^{60}Co$ is used in	d. preservation of food.

**C** Write a balanced chemical equation of reaction of chlorine with potassium bromide.

### Question 4

**A** Write the number that indicates :

1. Number of elements in Mendeleev's periodic table.
2. The atmospheric pressure at sea level.
3. Temperature at tropopause.
4. Number of groups in the modern periodic table.

**B** Mention one example of :

1. Endangered Egyptian bird.
2. A halogen exists in a solid state.
3. A polar compound consists of three atoms.
4. Atmospheric layer is suitable for flying of planes.

**C** Compare between simple ecosystem and complicated ecosystem according to the effect of absence (extinction) of one species.



**4 Cairo Governorate****Amoun Language School**

Answer the following questions :

**Question 1**

**A** Complete the following sentences :

1. The ultraviolet radiation has ..... effect, while the infrared has ..... effect.
2. Mendeleev arranged elements according to ..... , while Moseley arranged elements according to .....
3. The layer that has weather changes is ..... , while the coldest layer is .....
4. .... is a strongest metal, while ..... is a strongest nonmetals.

**B** Mention one example of :

1. Microfossils.
2. Endangered plant.
3. Device is used to measure the possibility of day weather.
4. Pollutant of ozone layer is used as a fire extinguishing.

**C** Give a reason for : pilots prefer to fly in the lower part of stratosphere.

**Question 2**

**A** Write the scientific term :

1. Arrangement of metals in a descending order according to their chemical activity.
2. Type of ultraviolet radiation doesn't penetrate the ozone layer with a percentage 100%.
3. Safe areas are established to protect endangered species in their homeland.
4. Traces or remains of an old living organism are preserved in sedimentary rocks.

**B** Determine the location of theses elements in modern periodic table :

1.  $_{10}\text{Ne}$
2.  $_{17}\text{Cl}$
3.  $_{20}\text{Ca}$
4.  $_{2}\text{He}$

**C** Calculate the height of a mountain if the temperature at its foot is  $30^{\circ}\text{C}$  and at its top is  $-6^{\circ}\text{C}$

**Question 3**

**A** Choose the correct answer :

1. Eating fish containing high concentration of ..... causes death of brain cells.  
a. arsenic                      b. lead                      c. cobalt 60                      d. mercury



2. Strongest nonmetal locates in group .....  
 a. 7A                      b. 1A                      c. 2A                      d. 18
3. From endangered mammals is .....  
 a. quagga.                      b. panda bear.                      c. ibis bird.                      d. mammoth.
4. The measuring unit of atomic radius is .....  
 a. picometer.                      b. millimeter.                      c. Dobson unit.                      d. millibar.

**B** Correct the underlined words :

- The elements which have an atomic number equals (18) are metallic elements.
- Both potassium and magnesium don't react with water.
- Dinosaur's eggs are example of cast.
- There are covalent bonds between water molecules.

**C** Find the atomic number of the element lies in the third period and group 5A.

**Question 4**

**A** Put (✓) or (✗), then correct the wrong ones :

- Desert is an example of simple ecosystem. ( )
- Water in solid state has lower density than that of liquid state. ( )
- Halogens are located in group 1A. ( )
- Liquified nitrogen is used in food preservation. ( )

**B** Cross out the odd word, then write the name of the others :

- Silicon – Arsenic – Bromine – Boron.
- Trilobite – Fern – Ammonite – Nummulite.
- CO<sub>2</sub> – CFCs – O<sub>2</sub> – CH<sub>4</sub>
- CO<sub>2</sub> – SO<sub>3</sub> – NO<sub>2</sub> – MgO

**C** Write the balanced chemical equation of the reaction between chlorine and potassium bromide.

5

Giza Governorate

Dokki Educational Zone

Answer the following questions :

**Question 1**

**A** Complete the following sentences :

- Mendeleev arranged the elements ascendingly according to .....
- Sodium reacts with water to produce ..... gas.
- From the pollutants of ozone layer are ..... and .....





**B** Give an example of each of the following :

1. An element doesn't react with water.
2. Extinct animal.
3. Endangered animal.
4. Simple ecosystem.

**C** Calculate the temperature at sea level if the temperature at height 7500 m is  $-15^{\circ}\text{C}$ .

### Question 2

**A** Write the scientific term for each of the following :

1. Elements that have properties of metals and nonmetals.
2. Dying out of all members of certain species.
3. It is the curved lines that join the points of equal pressure in atmospheric pressure maps.
4. Safe areas which established to protect the endangered species in their homeland.

**B** Give one difference between the following :

1. Acidic oxide and basic oxide.
2. Thermosphere and mesosphere.
3. Mold and cast.

**C** What is meant by chemical activity series.

### Question 3

**A** Choose the correct answer :

1. Fossils are found in ..... rocks.  
a. metamorphic                      b. igneous                      c. sedimentary
2. The element whose atomic number equals 18 is considered as ..... element.  
a. transition                      b. inert gas                      c. metallic
3. Water has a/an ..... effect on litmus paper.  
a. neutral                      b. basic                      c. acidic
4. The device which is used in measuring the atmospheric pressure is .....  
a. barometer.                      b. aneroid.                      c. altimeter.

**B** Cross out the odd word :

1.  $\text{F}_2$  –  $\text{Br}_2$  –  $\text{Cl}_2$  – Mg.
2. Mosses – Reptiles – Invertebrates – Fish.
3. Bilharzia – Typhoid – Hepatitis – Death of brain cells.
4. Sodium – Boron – Silicon – Germanium.

**C** Mention by chemical equation the effect of adding bromine to potassium iodide.



**Question 4****A** Give a reason for the following :

1. Occurrence of old extinction.
2. Ozone layer is formed in stratosphere.
3. Elements of the same group have similar properties.
4. Water is polar compound.

**B** Locate the position of the following element in the modern periodic table :

1. ( $_{11}\text{X}$ )
2. ( $_{20}\text{Y}$ )
3. ( $_{8}\text{Z}$ )

**C** Put (✓) or (✗), then correct the wrong ones :

1. The infrared rays has a chemical effect. ( )
2. Eating fish which contain high percentage of mercury causes blindness. ( )
3. Liquified sodium is used in preservation of eye cornea. ( )

**6****Giza Governorate****Official Language School**

Answer the following questions :

**Question 1****A** Choose the correct answer :

1. .... is an instrument that is used to determine the day weather.  
a. Aneroid      b. Thermometer      c. Altimeter      d. Isobar
2. There is ..... bond between oxygen and hydrogen in the water molecule.  
a. hydrogen      b. covalent      c. ionic      d. metallic
3. Fossils are important for all of the following except .....  
a. determination of sedimentary rocks age.  
b. studying the kinds of metals.  
c. petroleum exploration.  
d. figuring out the paleoenvironment.
4. The scientist ..... added zero group which includes inert gases to his table.  
a. Mendeleev      b. Rutherford      c. Moseley      d. Bohr

**B** Give an example for :

1. A solid halogen.
2. Severe climatic changes.
3. A polar compound.
4. Rays don't penetrate ozone layer by a percentage 100%.

**C** Calculate the atomic number of an element (X) that lies in group zero and period three.





## Question 2

### A Complete the following :

1. During the electrolysis of acidified water, ..... gas evolves at the cathode and ..... gas evolves at the anode.
2. .... is the coldest layer of atmosphere, but ..... is the hottest layer of atmosphere.
3. Archaeopteryx represents a link between ..... and .....
4. Mendeleev arranged the elements ascendingly according to ....., while Moseley arranged them ascendingly according to .....

### B Correct the underlined words :

1. Chemical pollution of water causes many diseases as hepatitis and typhoid.
2. Number of period indicates to the number of electrons in the outer energy level.
3. Atmospheric pressure is measured by a unit called meter.
4. Mammoth fossil is found preserved in amber.

### C Give a reason for : naming the petrified forest with wood mountain.

## Question 3

### A Write the scientific term :

1. It is the ability of the atom in covalent molecule to attract the electrons of the bond towards itself.
2. Safe areas established to protect the endangered species in their homeland.
3. The block that contains the series of lanthanide and actinides.
4. A charged layer reflects radio waves and found in upper part of thermosphere layer.

### B Match from column (B) what suits it in column (A) :

(A)	(B)
1. Silicon slides are	a. two magnetic belts.
2. Van-Allen belts are	b. nonmetallic atom that gains electrons.
3. Dobson is	c. used in electronic devices.
4. Negative ion is	d. a unit to measure the degree of ozone.

### C Write the balanced chemical equation between chlorine and potassium bromide.



**Question 4****A** Put (✓) or (✗) :

1. Each period in the modern periodic table starts with a nonmetal. ( )
2. The air moves vertically in the troposphere layer. ( )
3. Environmental pollution is from factors that cause recent extinction. ( )
4. The periodic table consists of 7 vertical groups and 18 horizontal periods. ( )

**B** Cross out the odd word :

1. Rhinoceros – Quagga – Bald eagle – Ibis bird.
2. Neon – Helium – Water – Argon.
3. Troposphere – Thermosphere – Stratopause – Mesosphere.
4. Mercury – Arsenic – Lead – Wastes of human.

**C** What happens when dipping the old insects in amber ?**7****Giza Governorate**

Science Inspectorate

Answer the following questions :

**Question 1****A** Complete the following sentences :

1. Water has ..... effect on litmus paper but sodium oxide has ..... effect.
2. In the upper part of stratosphere, ..... layer is found which absorbs ..... rays emitted from the Sun.
3. .... is from recently extinct birds, while ..... is from recently extinct mammals.
4. By increasing the atomic number in the same period, the metallic property ..... and atomic size .....

**B** Cross out the odd word and write the scientific term of others :

1.  $_{13}\text{Al}$  –  $_{5}\text{B}$  –  $_{11}\text{Na}$  –  $_{15}\text{P}$
2. Sodium – Silver – Potassium – Calcium.
3. Trilobite fossil – Ammonites fossil – Nummulites fossil – Ferns fossils.
4. Hoffman's voltmeter – Altimeter – Barometer – Aneroid.

**C** If the temperature at the sea level is  $20^{\circ}\text{C}$  , find the temperature at the top of a mountain its height is 2 km.



**Question 2****A** Write the scientific term for each of the following :

1. Continuous decrease in the number of a living organism without compensation until all members die out.
2. Elements that have both properties of metals and nonmetals.
3. It is the ability of the atom in a covalent molecule to attract the electrons of the chemical bond towards itself.
4. Curved lines that join the points of equal pressure in atmospheric pressure maps.

**B** Complete the following table :

P.O.C	Alkali	Halogen
Block :	a. ....	b. ....

P.O.C	Troposphere	Stratosphere
Temperature at the top :	c. ....	d. ....

P.O.C	Ferns fossils	Coral fossils
Indicate the environment :	e. ....	f. ....

P.O.C	Dinosaur	Dodo bird
Time of extinction :	g. ....	h. ....

**C** What happens when one type of species is absent from the simple ecosystem ?**Question 3****A** Choose the correct answer :

1. The ionosphere layer is surrounded by two ..... belts.
  - a. ionic
  - b. electric
  - c. magnetic
  - d. heat
2. .... is an example of microfossils.
  - a. Fern
  - b. Foraminifera
  - c. Coral
  - d. Amber
3. Ice crystals have ..... shape.
  - a. tetragonal
  - b. pentagonal
  - c. hexagonal
  - d. octagonal
4. Which of the following elements reacts with dilute hydrochloric acid .....
  - a. C
  - b.  $\text{Cl}_2$
  - c. S
  - d. Zn



**B** Mention an example representing :

1. Solid halogen.
2. Element used in food preservation.
3. Complicated system.
4. Pollutant causes depletion of ozone layer.

**C** Give a reason for : pilots prefer to fly their planes at the lower part of stratosphere.**Question 4****A** Put (✓) or (✗) and correct the wrong ones :

1. d-block consists of 10 groups. ( )
2. Increasing concentration of mercury in water causes blindness. ( )
3. Degree of ozone at STP is 200 Dobson. ( )
4. Ras Mohamed protectorate is the first established protectorate in Egypt. ( )

**B** Choose from column (B) what suits it in column (A) in the following tables :

(A)	(B)
1. The element which has the electronic configuration (2, 8, 8, 1) is locate in	a. barometer.
2. The device which is used to measure atmospheric pressure is	b. period 4 group 1
3. The first vertebrates that appeared on the Earth are	c. papyrus plant.
4. The plant which is used by pharaohs to manufacture writing papers is	d. fish.

**C** Define : cast.**8****Giza Governorate**

Taymour English School

Answer the following questions :

**Question 1****A** Complete the following sentences :

1. .... and .... are found below the modern periodic table.
2. .... gas is used in making insecticides that can affect the .....
3. Covalent bond can be broken by ..... or .....
4. Petrification takes place when ..... replaces the ..... material after decomposition.

**B** Write an example for :

1. A metalloid.
2. An element that has zero electronegativity.





3. A weaker polar compound than water.
4. A microfossil that helps in petroleum exploration.

**C** What happens if you put a litmus paper in water used in Hoffmann's voltammeter ?  
And why ?

## Question 2

**A** Choose the correct answer :

1. Both  $_{12}\text{X}$  and ..... are located in the same group.  
a.  $_{13}\text{Y}$                       b.  $_{21}\text{Z}$                       c.  $_{11}\text{A}$                       d.  $_{20}\text{W}$
2. Meteors are burnt in .....  
a. stratosphere.              b. mesosphere.              c. troposphere.              d. ionosphere.
3. .... increase as we go from left to right in the modern periodic table.  
a. Atomic size and metallic property  
b. Electronegativity and atomic size  
c. Nonmetallic property and atomic size  
d. Electronegativity and nonmetallic property
4. If a pilot is flying at a height of atmospheric pressure 80 mbar, so he is flying in .....  
a. troposphere.              b. exosphere.              c. stratosphere.              d. mesosphere.

**B** Cross out the odd word, then write the scientific term of the others :

1. Dodo bird – Papyrus plant – Ibis bird – Rhinoceros.
2. Carbon dioxide – Nitrogen – Water vapor – Chlorofluorocarbon.
3. Sodium oxide – Magnesium oxide – Sulphur dioxide – Calcium oxide.
4. Neutral effect on litmus paper – Low boiling point – Low density on freezing – Good solvent.

**C** Give a reason for : ozone is formed in stratosphere layer.

## Question 3

**A** Write the scientific term :

1. An ecosystem that has many alternatives if one species is extinct.
2. Descending arrangement for metals according to their chemical activity.
3. The measuring unit of atomic size.
4. A phenomenon that takes place as a result of scattering harmful cosmic radiations and seen from the two poles.



**B** Put (✓) or (✗) and correct the wrong ones :

1. Mammoth is found as a complete body as it was buried below amber. ( )
2. Natural protectorate is established to protect endangered species. ( )
3. Presence of lead in drinking water causes blindness. ( )
4. Aneroid is used in planes to measure the atmospheric pressure. ( )

**C** Show by a balanced chemical equation the reaction between an alkali metal and water.

**Question 4**

**A** Match :

(A)	(B)
1. The scientist who discovered the main energy levels is	a. ozone erosion.
2. The layer that is important in wireless communication is	b. Dobson.
3. The element that has a role in generating electricity is	c. making aerosols.
4. Chlorofluorocarbon is used in	d. Rutherford.
	e. ionosphere.
	f. Bohr.
	g. sodium.
	h. mesosphere.
	i. silicon.

**B** Correct the underlined words :

1. Moseley had to put more than one element in the same cell.
2. Lithium has the biggest electronegativity.
3. Under STP conditions, ozone thickness decreases to 3 km when atmospheric pressure reaches 100 mbar.
4. Quagga is a link between reptiles and birds.

**C** Calculate the temperature at 5870 meters height if the temperature at the foot is 24°C.

**9 Alexandria Governorate**

El-Montazah Educational Zone

Answer the following questions :

**Question 1**

**A** Complete the following sentences :

1. The most weather phenomena occurs in ..... layer but meteors are formed in ..... layer.
2. .... is a liquid halogen, while ..... is a solid halogen.





3. .... metal reacts with hot water vapor, while .... metal doesn't react with water.  
4. .... is an endangered bird, while .... is an endangered mammal.

**B Give one example for each of the following :**

- |                      |                      |
|----------------------|----------------------|
| 1. Polar compound.   | 2. Endangered plant. |
| 3. Simple ecosystem. | 4. Ozone pollutants. |

**C If the temperature at the sea level is 20°C find the temperature at the top of mountain its height 2 km above the Earth's surface.**

**Question 2**

**A Write the scientific term :**

1. The death of all members of species of living organisms.
2. A device is used to measure the elevation above the sea level.
3. The radioactive element that is used in food preservation.
4. From the halogen that can't replace bromine in its salt solution.

**B Mention one use of :**

- |                        |            |                     |
|------------------------|------------|---------------------|
| 1. Liquefied nitrogen. | 2. Halons. | 3. Van-Allen belts. |
|------------------------|------------|---------------------|

**C Cross out the odd word :**

1. Sodium – Potassium – Lithium – Iron.
2. Rhinoceros – Panda bear – Quagga – Bald eagle.
3. CO<sub>2</sub> – CH<sub>4</sub> – N<sub>2</sub>O – SO<sub>2</sub>
4. <sup>9</sup>F – <sup>17</sup>Cl – <sup>35</sup>Br – <sup>5</sup>B

**Question 3**

**A Correct the underlined words :**

1. The bond between water molecules is ionic bond.
2. Mendeleev arranged the elements in ascending order according to their atomic number.
3. The coral fossils indicate that the environment was hot rainy tropical forest.
4. Tropopause layer separates between stratosphere layer and mesosphere.

**B Give reasons for the following :**

1. Pilots prefer to fly their planes in the lower part of stratosphere.
2. The atomic size increases as we go down through the same group in the periodic table.
3. Sulphur dioxide is an acidic oxide.



- C** Locate the position of the following elements in the modern periodic table after drawing the electronic configuration :

1.  $_{18}\text{Ar}$

2.  $_{14}\text{Si}$

3. Complete : Ar is ..... gas, while Si is ..... element.

### Question 4

- A** Choose the correct answer :

- The thickness of stratosphere layer is ..... km.  
a. 50                      b. 37                      c. 13                      d. 80
- The strongest nonmetal is .....  
a. chlorine.              b. fluorine.              c. silicon.              d. neon.
- The normal atmospheric pressure at the sea level is .....  
a. 1013.25 bar.          b. 1013 mbar.          c. 1013 bar.              d. 1 bar.
- Increasing the ratio of ..... in water leads to blindness.  
a. lead                      b. mercury              c. arsenic              d. silicon

- B** What happens if ...?

- One member is absent in the complicated ecosystem.
- Adding chlorine to potassium bromide. (the chemical equation only)

- C** Compare between alkali metals and halogens (according to : group – valency – ion – example).

**10 Qalyoubia Governorate**

Science Inspectorate

Answer the following questions :

### Question 1

- A** Write the scientific term of each of the following :

- It is the ability of the atom in a covalent molecule to attract the electrons of the chemical bond.
- It is a group of food chains connected with each other.
- The ion which carries a number of charges equals the number of gained electrons.
- Curved lines that join the points of equal pressure in atmospheric pressure maps.

- B** Complete the following sentences :

- $\text{MgO} + \text{H}_2\text{O} \longrightarrow \dots\dots\dots$
- The ..... is used in manufacture of electronic devices.
- The degree of ozone is measured with .....
- The ultraviolet radiation has ..... effect.

- C** What happens when minerals replace wood material part by part of an old tree ?





## Question 2

**A** Choose the correct answer :

- ..... is from endangered species.  
a. Quagga                      b. Dinosaur                      c. Ibis bird                      d. Dodo bird
- Ozone layer prevents penetration of the ..... ultraviolet rays.  
a. near                      b. far                      c. medium                      d. all the previous
- The element ..... replaces hydrogen of water through instant active reaction.  
a. K                      b. Fe                      c. Ag                      d. Cu
- If the outer energy level for halogen element is (M) level, so its atomic number .....  
a. 7                      b. 10                      c. 17                      d. 19

**B** Put (✓) or (✗) :

- The p-block consists of five groups. ( )
- Each period in the modern periodic table starts with strong metal. ( )
- The first fossil of mammoth is discovered in amber. ( )
- The movement of air in troposphere is vertically. ( )

**C** A mountain of height 4 km and the temperature at its middle = 26°C. Find the temperature at the bottom of mountain.

## Question 3

**A** Correct the underlined words in each of the following :

- Amber fossil is considered as cast fossil.
- Moseley arranged the elements ascendingly according to atomic weight.
- The temperature at the end of thermosphere 120°C.
- The liquified nitrogen is used inside the nuclear reactors.

**B** Choose the odd word, then write the relation between the rest :

- Panda bear – Bald eagle – Mammoth – Rhinoceros.
- CH<sub>4</sub> – N<sub>2</sub>O – O<sub>2</sub> – CO<sub>2</sub>
- Bilharzia – Typhoid – Hepatitis – Liver cancer.
- <sup>11</sup>Na – <sup>3</sup>Li – <sup>12</sup>Mg – <sup>19</sup>K.

**C** The element : <sup>27</sup><sub>13</sub>Al

- Shows the electronic configuration of this element.
- Write the number of the period of this element.
- Write the number of the group of this element.



**Question 4**

**A** Complete the following sentences by using the following words between brackets :

(p – s – halogens – alkaline – magnetic – papyrus)

1. The zero group is located in ..... -block.
2. The chlorine element is from .....
3. The ionosphere is surrounded by two ..... belts.
4. .... plant is used by pharaohs for writing paper.

**B** Write the number that indicates (refers) to each of the following :

1. The number of groups in modern periodic table.
2. The boiling point of water.
3. The thickness of troposphere.
4. The wavelength of far ultraviolet radiation.

**C** If the degree of ozone in an area is **150 Dobson**. Find the percentage (ratio) of the erosion of ozone layer in this area.

**11 Menofia Governorate**

Shebeen El-Koum Educational Zone

Answer the following questions :

**Question 1**

**A** Complete the following statements :

1. Outer most energy level of halogen atom contain ..... electrons, but outer most energy level of atom of alkali metals contain ..... electron.
2. .... is the smallest atom and ..... is the largest atom.
3. Ultraviolet radiation has ..... effect and infrared radiation has ..... effect.
4. Archaeopteryx represents a link between ..... and .....

**B** Cross out the odd word and write the scientific term of others :

1.  $_{12}\text{Mg}^{+2}$  –  $_{11}\text{Na}^{+}$  –  $_{17}\text{Cl}^{-}$  –  $_{8}\text{O}^{-2}$
2.  $\text{NO}_2$  –  $\text{Na}_2\text{O}$  –  $\text{K}_2\text{O}$  –  $\text{Li}_2\text{O}$
3. Methyl bromide gas – Carbon dioxide gas – Water vapor – Methane gas.
4. Trilobite fossil – Nummulites fossil – Ferns fossils – Ammonites fossil.

**C** Locate the position of the element which its ion ( $\text{X}^{++}$ ) contain two energy levels (period, group and its block).



**Question 2****A** Put (✓) or (✗) and correct the wrong ones :

1. Elements are arranged descendingly according to their chemical activity in chemical activity series. ( )
2. By increasing differences in electronegativity between atoms, the polarity of the compound increases. ( )
3. By decreasing height from 85 km to 50 km, temperature of air decreases. ( )
4. Papyrus plant is an example of extinct plant. ( )

**B** Choose the correct answer :

1. Hydrogen bond among water molecules start to be formed when temperature of water becomes .....  
a.  $0^{\circ}\text{C}$                       b. less than  $4^{\circ}\text{C}$                       c. more than  $4^{\circ}\text{C}$                       d.  $-4^{\circ}\text{C}$
2. The gas that results from reaction of alkali metal with water is .....  
a.  $\text{H}_2$                       b. He                      c.  $\text{O}_2$                       d.  $\text{N}_2$
3. The shortest wave length of ultraviolet radiation is .....  
a. near.                      b. medium.                      c. far.                      d. no correct answer.
4. Fossils that indicate the environment where they lived was a hot rainy tropical environment is .....  
a. coral fossils.                      b. nummulites fossils. c. ferns fossils.                      d. trilobite fossils.

**C** What are the importance of the following ...?

1. Natural protectorate.
2. Sedimentary rocks.
3. Fossil record.

**Question 3****A** Write the scientific term of each of the following :

1. Arrangement of elements in ascending order according to their atomic number.
2. Water pollutant which cause death of brain.
3. The coldest atmospheric layer.
4. The path of energy that transmits from a living organism to another in the ecosystem.

**B** Correct the underlined words :

1. By increasing atomic number within group, nonmetallic property increases.
2. Sugar dissolves in water due to formation of ionic bond with water molecules.
3. The height of mountain if the temperature at its base is  $(30^{\circ}\text{C})$  and at its top is  $(-9^{\circ}\text{C}) = \underline{3 \text{ km}}$ .
4. Amber replaces wood materials to form petrified woods.

**C** Give a reason for : Mendeleev left gaps (empty cells) in his periodic table.



**Question 4**

**A** Choose from column (B) what suits it in column (A) :

(A)	(B)
1. From s-block of modern periodic table is	a. water vapour.
2. Element that doesn't react with water is	b. resinous matter.
3. From greenhouse gases is	c. ${}^2\text{Li}$
4. It is secreted by pine tree in old geologic ages	d. ${}^{29}\text{Cu}$

**B** Rearrange the following according to that between brackets :

- ${}_{11}\text{X} - {}_{17}\text{Y} - {}_{13}\text{M} - {}_{15}\text{Z}$  (descendingly according to their atomic size)
- Cesium – Sodium – Rubidium – Lithium. (ascendingly according to metallic property)
- Troposphere – Mesosphere – Stratosphere – Thermosphere.  
(ascendingly according to their thickness)
- Fish – Corals – Mammoth – Dinosaur. (according to first appearance on the life stage)

**C** Mention three reasons for recent extinction.

**12** **Dakahlia Governorate**

Science Inspectorate

Answer the following questions :

**Question 1**

**A** Complete the following statements :

- The modern periodic table consists of ..... horizontal periods and ..... vertical groups.
- Drinking water which contains high ratio of ..... leads to blindness and arsenic increase the rate of infection by .....
- Most of weather feature occur in ..... layer, but satellites rotate through the ..... layer.
- Fossils are used in ..... exploration and determining the age of .....

**B** Choose the correct answer :

- During electrolysis of acidified water by Hofmann's Voltameter .....  
 a. volume of oxygen gas equals volume of hydrogen gas.  
 b. volume of oxygen gas double volume of hydrogen gas.  
 c. volume of hydrogen gas three times volume of oxygen gas.  
 d. volume of hydrogen gas double volume of oxygen gas.





2. Reaction of potassium with water is stronger than that of sodium because .....
- atomic size of potassium is smaller than that of sodium.
  - metallic property of sodium is stronger than that of sodium.
  - atomic size of potassium is larger than that of sodium.
  - density of sodium larger than that of potassium.
3. The height of a mountain if the temperature at its foot is ( $20^{\circ}\text{C}$ ) and at its top is ( $-6^{\circ}\text{C}$ ) equals ..... km.
- 3
  - 4
  - 5
  - 6
4. The ozone layer allows 100% of the ..... UV rays to penetrate the Earth's atmosphere.
- near
  - medium
  - far
  - normal

**C** Write the balanced chemical equation of reaction of magnesium with diluted hydrochloric acid.

### Question 2

**A** Write the scientific term of each of the following :

- Oxides that dissolve in water forming solution turns litmus solution into blue colour.
- It is used in the preservation of cornea of the eye and its boiling point is  $-196^{\circ}\text{C}$ .
- It is used in airplanes to measure the elevation of navigation based on the atmospheric pressure.
- Safe places established to protect the endangered species.

**B** Correct the underlined words :

- Noble gases start to appear from fourth period in the periodic table.
- Carbon dioxide dissolves in water forming sulphuric acid.
- Increasing O<sub>2</sub> gas concentration in the atmosphere produces the global warming.
- Complete fossils of insects are found preserved in igneous rocks.

**C** Compare between coral fossils and ferns fossils.

### Question 3

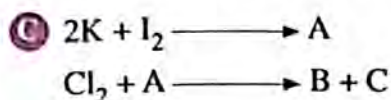
**A** Choose the odd word out, then write the scientific name of the rest :

- ${}_4\text{Be} - {}_{16}\text{S} - {}_{12}\text{Mg} - {}_{17}\text{Cl}$
- $\text{SO}_2 - \text{MgO} - \text{CO}_2 - \text{NO}_2$
- CFCs compounds – Methane gas – Halons – Methyl bromide gas.
- Papyrus plant – Rhinoceros – Panda bear – Quagga.



**B** Answer the following questions :

1. Who discover the main energy levels of the atom ?
2. Classify the following elements into two groups  
 $_{19}\text{K} - _{15}\text{P} - _{12}\text{Mg} - _4\text{C} - _{13}\text{Al} - _8\text{O}$
3. What is the importance of Van-Allen belts ?
4. What happen when there is no ozone layer ?



Write the name and the chemical formula of A , B and C

### Question 4

**A** Put (✓) or (✗) and correct the false ones :

1. Rutherford added zero group to the periodic table. ( )
2. The polarity of water molecule is stronger than that of ammonia molecule. ( )
3. Pilots prefer to fly their planes in the lower part of mesosphere. ( )
4. Trilobite is an example of petrified fossils. ( )

**B** Arrange the following according to that between brackets :

1.  $_9\text{F} - _{15}\text{P} - _2\text{He} - _{19}\text{K}$  (Ascendingly according to number of electrons in the outer energy levels)
2.  $_{20}\text{Ca} - _6\text{C} - _7\text{N} - _{13}\text{Al}$  (Ascendingly according to atomic size)
3. Cast fossil of fish – Mammoth fossil – Nummulite fossil – Archaeopteryx fossil.  
 (Start from first appearance on the life stage)
4. Troposphere – Stratosphere – Mesosphere – Thermosphere.  
 (Ascendingly according to their temperature at the top of each layer)

**C** What happens when one species disappeared from simple ecosystem and complicated ecosystem ?

## 13 El-Sharkia Governorate

### Science Inspectorate

Answer the following questions :

### Question 1

**A** Complete the following statements :

1. Mendeleev arranged the elements ascendingly according to ..... , while Moseley arranged the elements ascendingly according to .....
2. Infrared radiation has a ..... effect, while ultraviolet radiation has ..... effect.



3. Highest temperature layer in the atmosphere is ..... and the least temperature one is .....
4. Archaeopteryx represents a link between ..... and .....

**B** Put (✓) or (✗) and correct the wrong sentences :

1. Nonmetal oxides dissolve in water forming alkaline solution. ( )
2. Altimeter is used to determine the possible day weather. ( )
3. The measuring unit of the atmospheric pressure is millibar. ( )
4. Bohr had discovered the main energy level. ( )

**C** Give a reason for : liquefied nitrogen is used in preservation of the cornea of the eye.

**Question 2**

**A** Choose the correct answer :

1. Element ..... lies in the first period and zero group.  
a.  ${}_1\text{H}$                       b.  ${}_{10}\text{Ne}$                       c.  ${}_{20}\text{Ca}$                       d.  ${}_2\text{He}$
2. .... react very slowly with cold water.  
a. K and Na                      b. Cu and Ag                      c. Zn and Fe                      d. Ca and Mg
3. All the following cause erosion of ozone layer, except .....  
a. iron oxides.                      b. freon.                      c. nitrogen oxides.                      d. aerosols.
4. Satellites orbit in ..... around the Earth.  
a. exosphere                      b. thermosphere                      c. mesosphere                      d. stratosphere

**B** Complete the following sentences :

1.  $\text{Mg} + 2\text{HCl} \longrightarrow \dots + \dots$
2. .... and .... are examples of polar compounds.
3. The air movement in troposphere is ..... , while the air movement in stratosphere is .....
4. Among the pollutants of the ozone layer are ..... compounds that are used in air conditioning sets and ..... compounds that are used in fire extinguishers.

**C** Compare between simple and complicated ecosystem (according to definition and example).

**Question 3**

**A** Write the scientific term :

1. The ability of the atom in the covalent molecule to attract the electrons of the chemical bond to it.
2. Elements have the properties of both metals and nonmetals.



3. Two magnetic belts help in dispersing the harmful cosmic radiation away from Earth.
4. Safe areas that are specified to protect the endangered species in their natural environment.

**B Put (✓) or (✗) and correct the wrong sentences :**

1. The atomic size is measured by picometer. ( )
2. Meteors burnt in the mesosphere. ( )
3. Dinosaur is an extinct mammal that is considered the midway between horse and zebra. ( )
4. Cast is a replica of the internal details of an old living organism. ( )

**C What is the scientific principle upon which the elements are arranged in the modern periodic table ?**

**Question 4**

**A Choose the correct answer :**

1. Drinking water which contains high ratio of ..... leads to blindness.  
a. mercury                      b. lead                      c. arsenic                      d. sodium
2. Ozone layer is measured by a unit called .....  
a. km.                      b. nm.                      c. Dobson.                      d. mm<sup>3</sup>
3. .... is an example of microfossils.  
a. Foraminifera                      b. Ferns fossil  
c. Coral fossil                      d. Archaeopteryx fossil
4. Sodium oxide is from ..... oxides.  
a. amphoteric                      b. acidic                      c. nonmetallic                      d. basic

**B Cross out the odd word and mention what the rest has in common :**

1. Tellurium – Silicon – Boron – Bromine.
2. CO<sub>2</sub> – O<sub>2</sub> – N<sub>2</sub>O – CH<sub>4</sub>
3. Fluorine – Chlorine – Iodine – Sodium.
4. Panda bear – Rhinoceros – Dodo bird – Bald eagle.

**C What happens when decrease of water temperature less than 4°C ?**

**14 El-Gharbia Governorate**

**El-Santa Educational Zone**

Answer the following questions :

**Question 1**

**A Complete the following sentences :**

1. Each living organism has a role in transferring ..... in the path of the ..... chain.



2. The d-block contains ..... elements and they start from period .....
3. Most weather phenomena occur in ..... layer, but meteors are formed in ..... layer.
4. .... is from recently extinct birds, while ..... is from recently extinct mammals.

**B** Mention one example for each of the following :

1. One of the severe climatic changes.
2. The instrument used to determine the possible day weather based on the atmospheric pressure.
3. A liquid halogen in the modern periodic table.
4. The largest atomic size element in the periodic table.

**C** Write the chemical equations which express the reaction of magnesium with dilute hydrochloric acid.

**Question 2**

**A** Choose the correct answer :

1. The element whose atomic number is 17 is similar in chemical construction to the elements whose atomic number is .....  
 a. 2                      b. 7                      c. 9                      d. 19
2. (X) is an alkali metal that reacts with oxygen to form a chemical compound known as .....  
 a. XO                      b.  $X_2O$                       c.  $XO_2$                       d.  $X_2O_3$
3. The ultraviolet rays that have a wavelength of 300 nm are from ..... rays.  
 a. near UV                      b. far UV  
 c. medium UV                      d. near and medium UV together
4. The number of elements of period (4) is ..... the number of elements of the period (3).  
 a. more than                      b. equal to                      c. less                      d. half

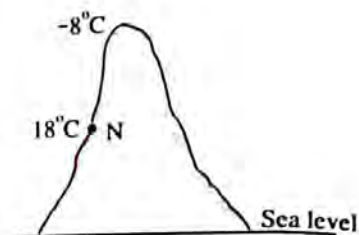
**B** 1. Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Fossils indicate the details of the life of an old plant	a. Radiolaria.
2. A fossil indicates the suitable conditions of petroleum formation	b. Archaeopteryx.
3. A fossil is considered as a link between reptiles and birds	c. Corals.
4. Invertebrates fossils were appeared before vertebrates on the life stage	d. Petrified woods. e. Dinosaurs.



2. A person stands at the point (N) in the middle of mountain and temperature at this point ( $18^{\circ}\text{C}$ ) and at the top of mountain ( $-8^{\circ}\text{C}$ ). Calculate :

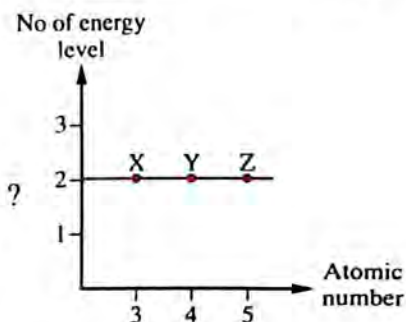
- Height of mountain.
- The temperature at the foot of mountain.



3. In the opposite graph :

The relation between atomic number and the number of energy levels occupied by electrons in 3 elements (X), (Y), (Z).

- Are these elements in the same period (or) the same group ?
- Which of these elements has the largest atomic size ?



- Ⓒ Mention one importance of index fossils.

### Question 3

- Ⓐ Write the scientific term of the following :

- Oxides that dissolve in water forming alkaline solutions.
- The region between the mesosphere and thermosphere.
- The death of all members of species of living organisms.
- The negative pole in Hoffman's voltameter.

- Ⓑ Correct the underlined words :

- Rutherford discovered the main energy levels.
- When water freezes, its density increases.
- Halons are from the causes of the ozone hole and global warming.
- The percentage of erosion of the ozone layer in a certain area, knowing that the ozone degree at this area is 255 Dobson equals 45%.

- Ⓒ What happen when putting a piece of sodium in water (with a balanced chemical equation) ?

### Question 4

- Ⓐ Put (✓) or (✗), then correct the wrong ones :

- Copper reacts with hydrochloric acid because it more active than hydrogen. ( )
- Yellowstone protectorate is found in northeastern China. ( )
- The mesosphere is the coldest layer in the atmospheric envelope. ( )
- Radioactive cobalt 60 is used in food preservation. ( )



**B** Cross out the odd word, then write the scientific term :

1.  ${}_3\text{Li}$  –  ${}_{11}\text{Na}$  –  ${}_{19}\text{K}$  –  ${}_{12}\text{Mg}$ .
2. Silicon – Boron – Arsenic – Bromine.
3. Cooling instruments – Cleaning electronic slides – Extinguishing fires – Aerosols propellers.
4. Mold – Angiosperms – Cast – Complete body fossil.

**C** Give a reason for : naming the petrified forest with wood mountain.

## 15 Behiera Governorate

Rasheed Educational Zone

Answer the following questions :

### Question 1

**A** Complete the following sentences :

1. Mendeleev arranged the elements in ascending order according to ..... , while Moseley arranged them ascendingly according to .....
2. Archaeopteryx represents the link between ..... and .....
3. Ultraviolet radiation has a ..... effect, and infrared radiation has ..... effect.
4.  $2\text{KBr} + \text{Cl}_2 \longrightarrow \dots + \dots$

**B** Correct the underlined words :

1. The first discovered fossil of mammoth was found in amber.
2. Methane gas is used as an insecticide to preserve stored agricultural crops.
3. Radioactive cobalt 60 is used in food preservation as it emits x-ray.
4. Most of the weather features occur in mesosphere layer.

**C** Mention the importance of the following :

1. Van-Allen belts.
2. Liquified nitrogen.

### Question 2

**A** Choose the correct answer :

1. Which of the halogens is the most active ? .....  
 a. Chlorine.                      b. Bromine.                      c. Fluorine.                      d. Iodine.
2. All of the following are endangered species, except .....  
 a. ibis bird.                      b. dodo bird.                      c. bald eagle.                      d. papyrus plant.







**Question 4****A** Choose the odd word out, then write the scientific term :

1. Mg – Fe – Na – Cu
2. CO<sub>2</sub> – NO<sub>2</sub> – O<sub>2</sub> – CH<sub>4</sub>
3. Aurora phenomenon – Burning of meteors – Ionosphere – Van Allen belts.
4. 20 km – 1013.25 mbar – 300 Dobson – 3mm.

**B** Give reasons for :

1. The desert ecosystem is significantly affected by the absence of one of its species.
2. Mendeleev left gaps in his periodic table.
3. The lower part of stratosphere is suitable for flying airplanes.

**C** Arrange the following fossils according to life evolution :

(Cast fossil of fish – Mammoth fossil – Trilobite fossil – Archaeopteryx).

**16 Fayoum Governorate**

West Fayoum Educational Zone

Answer the following questions :

**Question 1****A** Complete the following sentences :

1. Most weather features occur in ..... layer, while satellites swim through ..... layer.
2. The modern periodic table consists of ..... horizontal periods, and ..... vertical groups.
3. The strongest metal lies in the ..... group, while the strongest nonmetal lies in the ..... group.
4. Fossils are used in ..... exploration and determining the age of .....

**B** Choose from column (B) what suits it in column (A) :

(A)	(B)
1. O <sub>8</sub> is found in periodic table in	a. stratosphere.
2. Ar <sub>18</sub> is found in periodic table in	b. mesosphere.
3. The highest temperature layer in the atmosphere is	c. thermosphere.
4. The least temperature layer in the atmosphere is	d. second period and 6A group.
	e. second period and zero group.
	f. third period and zero group.

**C** What are the results of storing water in plastic bottles of mineral water ?



## Question 2

### A Correct the underlined words :

1. Each period in the modern periodic table starts with semi-metal element.
2. Ozone layer is protected us from infrared radiation.
3. Ammeter is used in electrolysis of water.
4. Mammoth is an example of microfossils.

### B Cross out the odd word :

1. Fluorine – Bromine – Boron – Iodine.
2. Dodo bird – Quagga – Bald eagle – Dinosaur.
3.  $N_7$  –  $Na_{11}$  –  $Mg_{12}$  –  $Cl_{17}$
4. Chlorofluorocarbon – Oxygen – Nitrous oxide – Methane gas.

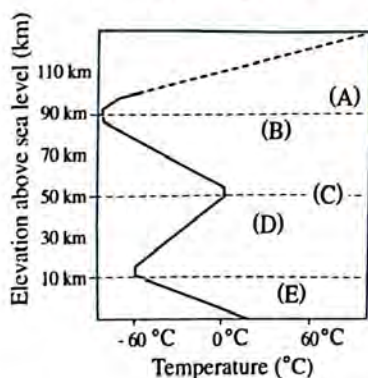
### C Mention one difference between simple and complicated ecosystems.

## Question 3

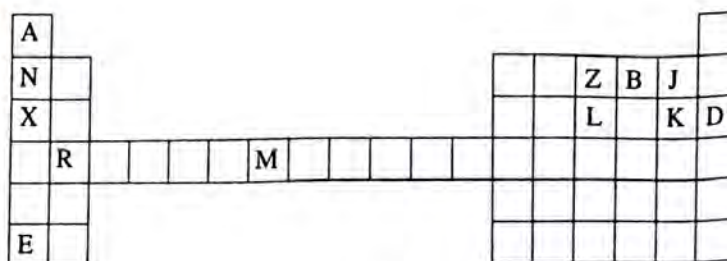
### A Write the scientific term of each of the following :

1. Safe areas established to protect endangered species in their homeland.
2. Slides are used in the manufacture of computers.
3. The ability of an atom in the covalent compound to attract the electrons of chemical bonds to itself.
4. The weight of air column on a unit area.

### B Look at the two figures then write which indicate the following :



(1)



(2)

1. At figure (1) the letter and name of layer at which planes fly in.





2. At figure (1) the letter and name of layer at which meteors burn.
3. At figure (2) the type of element (M) and found in which period.
4. At figure (2) the letter of element that has the highest atomic size and its group.

**C** Write the balanced chemical equations of dissolving of carbon dioxide in water.

### Question 4

**A** Choose the correct answer :

1. From alkali metal is .....
  - a. sodium.
  - b. helium.
  - c. calcium.
  - d. bromine.
2. .... indicate(s) extinction.
  - a. Fossils
  - b. Protectorates
  - c. Evolution
  - d. Ecological equilibrium
3. .... form negatively charged ions when they enter in the chemical reactions.
  - a. Inert gases
  - b. Metals
  - c. Halogens
  - d. Alkali metals
4. If the temperature at the base of Everest mountain is  $30^{\circ}\text{C}$ , what is the temperature at its top if the mountain height is 2 km ? .....
  - a.  $30^{\circ}\text{C}$
  - b.  $43^{\circ}\text{C}$
  - c.  $17^{\circ}\text{C}$
  - d.  $23.5^{\circ}\text{C}$

**B** Give an example for :

1. Amber fossil.
2. Element reacts in high temperature with only hot water vapour.
3. Element used in preservation of the cornea of the eye.
4. Pollutant of ozone layer that results from the burning fuel of ultrasound airplanes.

**C** Give a reason for : El-Mokattam mountain was once a sea floor more than 35 million years ago.

## 17 Beni-Suef Governorate

Official Language Schools Directorate

Answer the following questions :

### Question 1

**A** Choose the correct answer :

1. Fossils are often found in ..... rocks.
  - a. metamorphic
  - b. sedimentary
  - c. igneous
  - d. molten
2. There are ..... bonds among water molecules.
  - a. hydrogen
  - b. covalent
  - c. ionic
  - d. metallic



3. The temperature in troposphere reaches ..... at its top.  
 a. zero                      b. -90                      c. 1200                      d. -60
4. A type of ultraviolet rays that is absorbed completely in ozone layer is ..... UV.  
 a. far                      b. near                      c. medium                      d. thermal

**B What happens when ...?**

1. Absence of one member of species from a simple ecosystem.
2. Van-Allen belts scattering the harmful cosmic radiation.
3. Putting a piece of sodium in water. (write the chemical equation)

**C Locate the following element in the modern periodic table :**

1.  $_{13}\text{Al}$
2.  $_2\text{He}$

**Question 2**

**A Complete the following sentences :**

1. Archaeopteryx fossil is a link between ..... and .....
2. Elements of group (1A) are called alkali metals as they react with ..... forming .....
3. Most of weather features occurs in ..... layer, while satellites revolve through the ..... layer.
4. The atmosphere permits the passage of ..... and ..... rays coming from the Sun to be absorbed by Earth.
5. .... is a radioactive isotope which is used in preservation of food because it emits ..... rays.

**B If the temperature at the sea level  $26^{\circ}\text{C}$ , Find the temperature at the top of a mountain with a height 4000 metres.**

**Question 3**

**A Write the scientific term of each of the following :**

1. The arrangement of metals in descending order according to their chemical activity.
2. A water pollutant that causes the death of brain cells.
3. Thinning of ozone layer above the south pole.
4. The death of all members of species of living organisms.

**B Write the balanced chemical equation of :**

1. The reaction between magnesium and dilute hydrochloric acid.
2. Electrolysis of water.

**C Compare between Fluorine ( $_9\text{F}$ ) and cesium ( $_{55}\text{Cs}$ ) according to :**

1. The kind of each of them.
2. Atomic size of each of them.



**Question 4****A** Put (✓) or (✗) :

1. Potassium oxide is considered as basic oxide. ( )
2. The first protectorate in Egypt is Bluestone protectorate. ( )
3. The infrared has a chemical effect. ( )
4. The atmospheric pressure decreases by increasing the altitude from the sea level. ( )

**B** Mention an example for :

1. An endangered bird.
2. A covalent compound.
3. A greenhouse gas.
4. Metal react with cold water.

**C** If the volume of gas produced from the electrolysis of water at cathode equal  $8 \text{ cm}^3$ , Calculate the volume of gas produced at anode and write its name.**18 Minia Governorate****Science Inspectorate**

Answer the following questions :

**Question 1****A** Complete the following sentences :

1. Mendeleev arranged the elements ascendingly according to ..... , while Moseley arranged them ascendingly according to .....
2. Increasing the ..... concentration in drinking water causes blindness, while ..... causes death of brain cells.
3. Clouds are formed in ..... layer, while meteors are formed in ..... layer.
4. Index fossils are characterized by ..... range of time and ..... geographical range.

**B** Mention the number representing each of the following :

1. Number of known elements in the modern periodic table till now.
2. Number of groups in p-block.
3. Number of layers of the atmosphere.
4. Normal degree of ozone layer.

**C** Locate the position of  ${}_{16}\text{S}$  in the modern periodic table.**Question 2****A** Write the scientific term of each of the following :

1. They are elements which have the properties of both metals and nonmetals.



2. The ability of the atom in covalent molecule to attract the electrons of the chemical bond towards itself.
3. It is a region in which the atmospheric envelope is inserted in outer space.
4. It is the continuous decrease without compensation in the number of a certain species of living organisms until all members of species die out.

**B** Mention the importance of each of the following :

1. Radioactive cobalt 60.
2. Hoffman's voltmeter.
3. Satellites.
4. Ras Mohamed protectorate.

**C** Give a reason for : El-Mokattam mountain was a part of sea floor more than 35 million years ago.

### Question 3

**A** Choose the correct answer :

1. The atomic radius is used as a measurement of the atomic size of the atom and its measuring unit is .....  
 a. metre.                      b. millimetre.                      c. nanometre.                      d. picometre.
2. Eye cornea is preserved under the surface of liquified .....  
 a. sodium.                      b. hydrogen.                      c. nitrogen.                      d. oxygen.
3. If the temperature at the mountain foot is  $20^{\circ}\text{C}$  and at its top is  $7^{\circ}\text{C}$ , so the mountain height will be .....  
 a. 2 km.                      b. 2 m.                      c. 1 km.                      d. 3 m.
4. There is a relation between discovering petroleum oil and the fossil of .....  
 a. ammonites.                      b. mammoth.                      c. archaeopteryx.                      d. radiolaria.

**B** Compare between each of the following :

1. Potassium and silver (concerning to behavior with water).
2. Troposphere and stratosphere (concerning to the motion of air).
3. Fluorine and cesium (concerning to the atomic size).
4. Methylene bromide gas and Halons (concerning to their uses).

**C** Illustrate by using a symbolic balanced chemical equation the reaction between sodium and water.

### Question 4

**A** Correct the underlined words :

1. Aluminun slides are used in the manufacture of computers.
2. The halogen which exists in a liquid state is iodine.
3. The percentage of water vapour in the last three layers of the atmosphere is 99%
4. The trace is what the living organism leave after its death in the sedimentary rocks.





**B Cross out the odd word :**

1. Biological pollution – Chemical pollution – Noise pollution – Thermal pollution.
2. Thermometer – Barometer – Aneroid – Altimeter.
3. Destroying natural habitat – Overhunting – Environmental pollution – Meteorite impacts with Earth.
4. Sodium oxide – Sulphur dioxide – Magnesium oxide – Potassium oxide.

**C What are the consequences of silica matter replaces wood material part by part of an old tree ?**

**19 Qena Governorate**

**Science Inspectorate**

Answer the following questions :

**Question 1**

**A Complete the following sentences :**

1. The modern periodic table consists of ..... horizontal periods and ..... vertical groups.
2. .... is used in food preservation, because it emits ..... rays which prevent reproduction of microbial cells.
3. Increasing the mercury concentration in drinking water causes ....., while increasing arsenic concentration in it increases the infection rate by .....
4. Archaeopteryx is the link between ..... and .....

**B Correct the underlined words :**

1. Bar is the measuring unit of ozone degree.
2. Element X lies in third period and group (6A), its atomic number equals 25.
3. Nummulites fossils indicate the age of sedimentary rocks.
4. Mammoth is an example of microfossils.

**C Give reasons for : the atmospheric pressure decreases on going above sea level.**

**Question 2**

**A Write the scientific term of each of the following :**

1. An instrument used in planes to measure the elevation from sea level based on atmospheric pressure.
2. They are elements which have properties of both metals and nonmetals.
3. It is the path of energy that transmits from a living organism to another.
4. A type of ultraviolet radiation that is absorbed completely by ozone layer.



**B** Cross out the odd word, then state the relation among the remaining words :

1. Silver – Sodium – Iron – Calcium.
2.  $\text{CO}_2$  –  $\text{MgO}$  –  $\text{Na}_2\text{O}$  –  $\text{CaO}$
3. Fluorine – Chlorine – Bromine – Argon.
4. Rhinoceros – Panda bear – Quagga – Bald eagle.

**C** What is meant by global warming ?

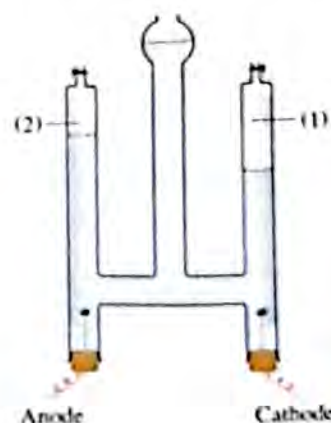
### Question 3

**A** Put (✓) or (✗) :

1. Halons are used as insecticide. ( )
2. Ras Mohamed is the first established protectorate in Egypt. ( )
3. During chemical reactions, alkali metals form negative ions. ( )
4. Atomic size increases in the same group by increasing the atomic number. ( )

**B** From the opposite figure, complete the following :

1. The name of this apparatus is .....
2. Label the numbers (1) ..... (2) .....
3. The balanced chemical equation of this reaction is .....
4. If the volume of the gas that evolves at cathode is  $20 \text{ cm}^3$ , so the volume of the gas that evolves at anode is .....



**C** The temperature at the base of mountain is  $30^\circ\text{C}$  and at its top is  $(-20^\circ\text{C})$ , Find the height of the mountain.

### Question 4

**A** Choose the correct answer :

1. The scientist ..... discovered that the nucleus of atom contains positively charged protons.
  - a. Bohr
  - b. Rutherford
  - c. Moseley
2. There are ..... bonds among water molecules.
  - a. ionic
  - b. covalent
  - c. hydrogen
3. Luminous meteors are formed in .....
  - a. troposphere.
  - b. mesosphere.
  - c. thermosphere.
4. .... fossils indicate that the environment where they lived was a hot and rainy tropical environment.
  - a. Ferns
  - b. Corals
  - c. Trilobite



**B** Complete the following table :

Points of comparison	Troposphere	Stratosphere
Thickness :	.....	.....
Air movement :	.....	.....

**C** Show by balanced chemical equation how can you obtain magnesium hydroxide from magnesium.

**20 Luxor Governorate**

Luxor Educational Zone

Answer the following questions :

### Question 1

**A** Complete the following statements by using the words in the brackets :

(transition – thermosphere – chlorine – inert – mesosphere – radiolaria – fluorine – forminifera)

- ..... and ..... are halogens that are found in gaseous state.
- ..... elements are found in the middle of the modern periodic table, while ..... gases are found in zero group.
- The hottest layer in the atmosphere is ..... while, the coldest layer in the atmospheric envelope is .....
- ..... and ..... are examples of microfossils.

**B** Correct the underlined words :

- Pure water has an acidic effect on litmus paper.
- Metallic oxides are called acidic oxides.
- Infrared radiations have a chemical effect.
- Meteors burn in the stratosphere.

**C** Locate the position of the following element in the modern periodic table :  ${}_{12}\text{Mg}$

### Question 2

**A** Choose the correct answer :

- p-block contains ..... groups.
  - 6
  - 2
  - 10
  - 8
- The scientist ..... had discovered the main energy levels.
  - Rutherford
  - Bohr
  - Moseley
  - Mendeleev
- ..... is a device that is used to measure the atmospheric pressure.
  - Barometer
  - Thermometer
  - Nanometer
  - Millimeter
- Studying the fossil record showed that the first vertebrates that appeared were .....
  - reptiles.
  - mammals.
  - amphibians.
  - fish.



**B** Mention one importance of the following :

- |                          |                          |
|--------------------------|--------------------------|
| 1. Silicon slides.       | 2. Ozone layer.          |
| 3. Hoffman's voltametre. | 4. Natural protectorate. |

**C** Give a reason for : the extinction of some animals in recent ages.

### Question 3

**A** Put (✓) or (✗) :

- |   |     |
|---|-----|
| 1. Lanthanides and actinides are found in f-block.                          | ( ) |
| 2. Ionosphere is surrounded by two magnetic belts known as Van-Allen belts. | ( ) |
| 3. Eating food with high concentration of lead causes blindness.            | ( ) |
| 4. Fossils are found in igneous rocks.                                      | ( ) |

**B** Write the scientific term of each of the following :

- Elements have both properties of metals and nonmetals.
- The bond that exists between water molecules.
- It is the type of ultraviolet rays that penetrates the ozone layer by a percentage 100%.
- Curved lines that join the points of equal pressure in atmospheric pressure maps.

**C** What happens when reacting magnesium with dil. hydrochloric acid. (Write the equation) ?

### Question 4

**A** Choose from column (B) what suits it in column (A) :

(A)	(B)
1. The measuring unit of the atomic size of the element	a. Mold.
2. The most active metal in group (1A)	b. Picometer.
3. A replica of the external details of an old living organism	c. Dobson.
4. The measuring unit of ozone degree	d. Cast.
	e. Cesium.

**B** Give one example of each of the following :

- |                      |                                |
|----------------------|--------------------------------|
| 1. A polar compound. | 2. A pollutant of ozone layer. |
| 3. An acidic oxide.  | 4. An extinct bird.            |

**C** What is meant by simple ecosystem ?



حمل الآن

مجاناً وحصرياً

# امتحانات رقم (4)

## الترم الاول





# Final Examinations

## of Some Governorates



2022

### 1 Cairo Governorate

Loaders Language School

Answer the following questions :

#### Question 1

**A** Complete the following sentences :

1. Mosely put ..... and ..... series below his periodic table.
2. During chemical reaction, metals tend to ..... outer electrons taking the structure of the nearest ..... noble gas.
3. Iodine is found in ..... state, while bromine is found in ..... state.
4. .... were the first vertebrate appeared and followed by .....

**B** Write the scientific term of each of the following sentences :

1. Two magnetic belts help in scattering of harmful cosmic radiations away from the Earth.
2. An ozone pollutant that is used as an insecticide.
3. A water pollutant that causes death of brain cells.
4. Descending arrangement of metals according to their chemical activity.

**C** Represent the next reactions by balanced chemical equations :

1. Reaction of magnesium oxide with water.
2. Reaction of bromine with potassium iodide.

#### Question 2

**A** Give reasons for :

1. Mammoth fossil is preserved as a complete body fossil.
2. The simple ecosystem is severely affected by absence of one of its species.
3. Increasing  $\text{CO}_2$  gas percentage in the atmosphere.
4. Cesium is the strongest metal in the modern periodic table.

**B** Cross out the odd word, then write the scientific term of the rest :

1. Sodium / Cesium / Lithium / Chlorine.
2. Silicon / germanium / Magnesium / Tellurium.
3. Freon / Water vapour / Halons / Nitrogen oxides.
4. Aneroid / Barometer / Hofmann's voltameter / Altimeter.



**C Problem :**

Find the temperature at a point of height 3000 meters above the sea level, if the temperature at the sea level is (30°C).

**Question 3****A Choose the correct answer :**

- ..... layer in atmosphere that is suitable for flying planes.  
a. Troposphere      b. Stratosphere      c. Thermosphere      d. Mesosphere
- ..... discovered the main energy levels in the atom.  
a. Bohr      b. Mendeleev      c. Mosely      d. Rutherford
- ..... causes blindness when its ratio increases in drinking water.  
a. Arsenic      b. Iron      c. Lead      d. Mercury
- ..... is used in preservation of eye cornea.  
a. Liquefied sodium      b. Liquefied nitrogen  
c. Silicon      d. Cobalt

**B Write one importance of :**

- Exosphere layer.
- Ras Mohamed protectorate.
- Foraminifera microfossil.
- Ferns fossil.

**C Locate the following elements in the modern periodic table :**

- ${}_{19}\text{K}$
- ${}_{10}\text{Ne}$

**Question 4****A What happens when ... ?**

- The sediments fill up the empty snail, then the outer shell is decomposed.
- We go from up to down in group 7A.
- Hydrogen bonds were absent between water molecules. (concern boiling point).
- Halogens react with metals.

**B Put (✓) or (✗), then correct the false one (s) :**

- Meteors are formed in the thermosphere layer. ( )
- Infrared radiation has chemical effect. ( )
- Petrified fossil was formed by replacing organic substances with minerals. ( )
- Dinosaurs were extinct due to over hunting. ( )



**C** Mention the number representing each of the following :

1. Thickness of stratosphere layer.
2. Temperature at the top of mesosphere.

## 2 Cairo Governorate

Manor House International School

Answer the following questions :

### Question 1

**A** Complete the following sentences :

1. Mendeleev arranged the elements ascendingly according to .....
2. The highest temperature layer in the atmosphere is .....
3.  $\text{MgO} + \text{H}_2\text{O} \longrightarrow$  .....
4. Dodo bird is from the ..... bird.

**B** Correct the underlined words :

1. Copper reacts instantly with water and hydrogen gas evolved.
2. Panda bear is considered from extinct species.
3. Inert gases have the properties of metals and nonmetals.
4. All weather phenomena like rain, wind and clouds occur in the ionosphere layer.

**C** What happen when ... ?

Decreasing the temperature of water to less than  $4^\circ\text{C}$ .

### Question 2

**A** Choose the correct answer :

1. .... replace(s) the wood organic material, part by part of an old tree.  
a. Plastic                      b. Iron                      c. Minerals                      d. Copper
2. Ozone layer is found in ..... layer.  
a. troposphere                      b. mesosphere                      c. thermosphere                      d. stratosphere
3. The density of ice is ..... the density of water.  
a. less than                      b. more than                      c. equal to                      d. double of
4. The atomic number of an element that exists in group (7A) and period (2) is .....  
a. 12                      b. 7                      c. 9                      d. 17

**B** Put (✓) or (✗) in front of the following statements :

1. The atomic size decreases in the same group as atomic number increases. ( )
2. The air moves horizontally in the lower part of stratosphere. ( )
3. Amber is a complete body fossil. ( )
4. Halogens are monovalent elements. ( )



**C Problem :**

If the temperature at the sea level is  $20.6^{\circ}\text{C}$ . Find the temperature at the top of a mountain of height 2 km above Earth's surface. [Don't forget the rule].

**Question 3****A Write the scientific term of each of the following sentences :**

1. It's the addition of any substance to the water which causes continuous gradual change in water properties affecting the health and the life of living creatures.
2. The death of all members of species of living organisms.
3. A device that is used to measure the elevation above the sea level.
4. The radioactive element that is used in food preservation.

**B Mention one example for each of the following :**

1. Halogen is found in solid state.
2. Fossil of a complete body.
3. Covalent compound cannot dissolve in water.
4. The strongest metallic element.

**C Locate the following elements in the modern periodic table showing your steps :**1.  $_{13}\text{Al}$ 2.  $_{10}\text{Ne}$ **Question 4****A Determine the odd word :**

1. Rhinoceros / Panda bear / Quagga / Bald Eagle.
2. Sodium / Potassium / Silver / Iron.
3. Sugar / Animal wastes / Lead / Mercury.
4. Bromine / Chlorine / Nitrogen / Fluorine.

**B Mention the importance of :**

- |                              |                            |
|------------------------------|----------------------------|
| 1. The ozone layer.          | 2. The liquefied nitrogen. |
| 3. The Hoffman's voltameter. | 4. The aneroid.            |

**C Give a reason for :**

Solution of carbon dioxide changes the color of blue litmus paper into red.  
[Write your answer and the chemical equation that represents this reaction].



## 3 Cairo Governorate

Answer the following questions :

## Question 1

**A** Complete the following sentences :

1. The strongest nonmetal lies in group ..... , while the strongest metal lies in group .....
2. .... is the coldest layer in the atmosphere, while ..... is the hottest layer.
3.  $2\text{Mg} + \text{O}_2 \xrightarrow{\Delta}$  .....
4. .... is from extinct mammals, while ..... is from endangered mammals.

**B** Mention one example for :

1. A covalent polar compound.
2. A device used to measure the atmospheric pressure.
3. An endangered plant.
4. Halogen in a liquid state.

**C** Problem :

If the volume of the gas evolved above the cathode of Hofmann's voltameter is  $10 \text{ cm}^3$ .

**Calculate** the volume of the gas evolved above the anode.

**And** mention the name of the gas above the anode and the gas above the cathode.

## Question 2

**A** Choose the odd word out, then write the scientific term of the others :

1.  ${}_9\text{F}$  /  ${}_6\text{C}$  /  ${}_{35}\text{Br}$  /  ${}_{17}\text{Cl}$ .
2.  $\text{CO}_2$  /  $\text{O}_2$  /  $\text{N}_2\text{O}$  /  $\text{CH}_4$ .
3. Cast / Fossil of a complete body / Fossil record / Mold.
4. Dodo bird / Bald eagle / Ibis bird / Rhinoceros.

**B** Put (✓) or (✗) in front of the following statements :

1. The modern periodic table consists of (17) horizontal periods and (8) vertical groups. ( )
2. Potassium oxide is considered from basic oxide. ( )
3. Ozone molecule consists of four oxygen atoms. ( )
4. Temperature decreases by  $6.5^\circ\text{C}$  at 2 km above the sea level. ( )

**C** Compare between :

The Fluorine ( ${}_9\text{F}$ ) and Cesium ( ${}_{55}\text{Cs}$ )

(According to : 1- The kind of each of them.

2- Atomic size of each of them.)



**Question 3****A Choose the correct answer :**

- Ozone degree is measured in a unit that is called .....  
a. Km                      b. nm                      c. Dobson                      d. Pm
- Eating fish which contain high concentration of ..... causes the death of brain cells.  
a. mercury                      b. arsenic                      c. lead                      d. iron
- ..... is an example of microfossils.  
a. Fern                      b. Foraminifera                      c. Mammoth                      d. Amber
- The upper (3) layers of atmosphere contain ..... of water vapor.  
a. 1%                      b. 25%                      c. 75%                      d. 99%

**B Write the scientific term of each of the following sentences :**

- An arrangement of metals in a descending order according to their chemical activity.
- A phenomenon looks like a colorful light curtains seen at the two poles of the Earth.
- Remains of old living organisms that are preserved in sedimentary rocks.
- The continuous increase of the average temperature of the air near the surface of the Earth.

**C What happens if ... ?**

- Putting a piece of sodium in water.
- Harmful cosmic radiations collide with the ionosphere.

**Question 4****A Choose from column (B) what suits it in column (A) in the following tables :**

(A) Probably harms	(B) Responsible pollutant
1. Blindness	a. sodium.
2. Death of brain cells	b. lead.
3. Cancer of liver	c. mercury.
4. Bilharzia and hepatitis	d. mixing water with human and animal wastes.
	e. arsenic.

1. ....                      2. ....                      3. ....                      4. ....



(A)	(B)
1. Liquid sodium 2. Liquefied nitrogen 3. Cobalt 60 4. Silicon slides	a. is used in preservation of food. b. is used in manufacture of electronic device. c. is used in nuclear reactor. d. is used to easy studying of the chemical and physical properties of elements. e. is used in preservation of the eye cornea.
1. ....	2. .... 3. .... 4. ....

**B Fill the following spaces :**

1. Name of this group is .....
2. Atomic number of element (X) = .....
3. Atomic size of element (Y) is ..... than atomic size of element (X).
4. The atoms of elements of this group form ..... ion in the chemical reactions.

**C Locate the following elements in the modern periodic table :**

1.  $_{10}\text{Ne}$

2.  $_{8}\text{O}$

Li
Na
X
Rb
Y
Fr

**4 Cairo Governorate**

El-Helmia Official Language School

Answer the following questions :

**Question 1**

**A Complete the following sentences :**

1. Ultraviolet rays have ..... effect, while infrared rays have ..... effect.
2. Mendeleev arranged elements according to their ....., whereas Moseley arranged elements according to their .....
3. The hottest atmospheric layer is ....., while the coldest layer is .....
4. Elements of group (1A) are called ....., while elements of group (7A) are called .....
5. The strongest metallic element is ....., and the strongest nonmetallic element is .....

**B Mention the importance of :**

1. Cobalt 60.

2. Altimeter.

**Question 2**

**A Give reasons for :**

1. Pilots prefer to fly their planes in the lower part of stratosphere layer.
2. Liquefied nitrogen is used in preservation of the eye cornea.
3. Desert is a simple ecosystem.
4. Establishing natural protectorates.



**B** Locate the following elements in the modern periodic table :

1.  $_{17}\text{Cl}$

2.  $_{18}\text{Ar}$

**C** Compare between :

Troposphere and stratosphere, according to the atmospheric pressure at its top and its thickness.

### Question 3

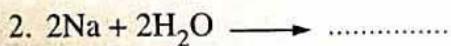
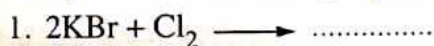
**A** Write the scientific term of each of the following sentences :

1. It is a weak electrostatic attraction force arises between molecules of polar compounds.
2. The ability of atom in the covalent molecule to attract the bond electrons to itself.
3. Remains and traces of old living organisms that lived in the past for certain period then became extinct.
4. Atmospheric layer that plays an important role in wireless communication.

**B** What is meant by ... ?

Atmospheric pressure.

**C** Complete the following equations :



### Question 4

**A** Choose the correct answer :

1. Ozone layer is found in ..... layer.  
a. troposphere      b. mesosphere      c. stratosphere
2. .... is an example of extinct animal in the old age.  
a. Dodo bird      b. Quagga      c. Dinosaur
3. .... is the measuring unit of the degree for ozone layer.  
a. Picometer      b. Dobson      c. Nanometer
4. .... protectorate is the first natural protectorate established in Egypt.  
a. Wadi Hetan      b. Ras Mohammed      c. Saint Catherine

**B** Calculate :

The temperature at the top of a mountain, if you know that the temperature at its foot is  $27^\circ\text{C}$  and its height is 3 km.

**C** What happens when ... ?

1. One of species in a complicated ecosystem extincted.
2. Concentration of mercury increases in drinking water.







What is/are the symbol which indicates the ... ?

1. Inert gases.
2. Halogens.
3. d-block elements.
4. Higher active metal.
5. Highest electronegativity element.

**C** Give an example of each of the following :

1. Extinct species in the old geological ages.
2. Greenhouse gases.

### Question 3

**A** Write the scientific term of each of the following sentences :

1. It is the weight of air column of an atmospheric height on a unit area.
2. It is the addition of any substance to the water, which causes continuous gradual change in water properties affecting the health and the life of living creatures.
3. The remains or traces of organisms that lived in the past and were preserved in sedimentary rocks.
4. It is curved lines that join the points of equal pressure in atmospheric pressure maps.
5. The continuous decrease without compensation in the number of a certain species of living organisms until members of species dies out.

**B** 1. Write the balanced chemical equations representing the following reactions :

1. The reaction between magnesium and dilute hydrochloric acid.
2. The reaction between bromine and potassium iodide.

2. Locate the following elements in the modern periodic table :

1.  ${}_{20}\text{Ca}$

2.  ${}_1\text{H}$

**C** Write the important of each of the following :

1. Ozone layer.
2. Cobalt 60.
3. Hofmann's voltameter.
4. Moseley's periodic table.
5. Ionosphere.

### Question 4

**A** Compare between :

1. Mold and Cast (according to definition and example).
2. Aneroid and Altimeter (according to its importance).

**B** Correct the underlined words :

1. Each period ends with a nonmetal.
2. When water freezes its density doesn't change.
3. The normal degree of ozone is 200 Dobson.
4. Panda bear is one of extinct species.
5. Thermosphere layer contains 75% of the mass of the atmospheric air.



- C** Mention the atomic number of each of the following elements :
1. The element, which is located in the second period and in group (7A).
  2. The element, which is located in the third period and in group (1A).
  3. The element, which is located in the first period and in group (18).

6

Giza Governorate

Egypt Dream Language School

Answer the following questions :

### Question 1

- A** Complete the following sentences :

1. .... is a type of barometers used to determine the possible day weather, while .... is instrument used to measure the altitude of airplanes above the sea level.
2. The coldest layer of the atmospheric envelope is called ....., while all weather phenomena are present in the ..... layer.
3. When temperature of water becomes less than  $4^{\circ}\text{C}$  its density ....., while its volume .....
4. .... is an endangered bird, while .... is an endangered mammal.

- B** Write the scientific term :

1. The addition of any substance to water, which causes continuous gradual change in water properties affecting the health and life of living organisms.
2. Trapping of infrared radiation in troposphere due to the increase in the percentage of greenhouse gases.
3. The death of all members of species of living organisms.
4. Thinning of ozone layer above the south pole.

- C** Problem :

Find the temperature at a point of height 10 km above the sea level, if the temperature at the sea level is  $24^{\circ}\text{C}$ .

### Question 2

- A** Choose the correct answer :

1. The element whose atomic number equals 18 is considered ..... element.
  - a. transition
  - b. inert gas
  - c. metallic



2. In the periodic table, the elements which are similar in their chemical properties are located in the same .....
  - a. period.
  - b. energy level.
  - c. group.
3. Water has a/an ..... effect on litmus paper.
  - a. acidic
  - b. neutral
  - c. basic
4. In water electrolysis, if the volume of the evolved gas above the cathode is  $8 \text{ cm}^3$ , so the volume of the evolved gas above the anode is .....  $\text{cm}^3$ .
  - a. 16
  - b. 8
  - c. 4

**B** You have 3 elements X, Y and Z of atomic numbers 2, 9 and 12 respectively, answer the following :

1. Determine their location in the modern periodic table.
2. Calculate the atomic number of the element, which follows element Z in the same group.

**C** Give an example of each of the following :

1. Greenhouse gases.
2. Simple ecosystems.

### Question 3

**A** Give reasons for :

1. The temperature at the top of a mountain is less than that at its foot.
2. Stop producing concorde aeroplanes.
3. Oil doesn't dissolve in water.
4. Wadi El-Hetan is considered as the most important area in Wadi Al-Rayan protectorate.

**B** Correct the underlined words :

1. The angle between the two covalent bonds of water molecule is  $180^\circ$ .
2. The ozone layer extends from 20 to 30 km above the sea level.
3. Pilots prefer to fly their aeroplanes in the lower part of mesosphere.
4. Magnesium reacts with dilute HCl and  $\text{Cl}_2$  gas evolves.

**C** What is meant by ... ?

1. The chemical activity series.
2. Food web.

### Question 4

**A** Complete the following sentences :

1. The ultraviolet radiation has ..... effect, while infrared radiation has ..... effect.



2. Elements of s-block are located on the ..... side of the periodic table, and they are arranged in two groups which are ..... and .....
3. The valency of group 7A elements is .....
4. Bromine exists in a ..... state, while iodine exists in a ..... state.

**B Choose out the odd symbol or word :**

1.  $\text{Na}_2\text{O}$  /  $\text{MgO}$  /  $\text{CO}_2$  /  $\text{CaO}$
2.  $\text{F}_2$  /  $\text{Cl}_2$  /  $\text{Br}_2$  / C
3. Cast / Mold / Fossil record / Petrified fossil.
4. Nitrogen oxides / Water Vapor / Freon / Halons.

**C What happens when ... ?**

1. Harmful cosmic radiations collide with ionosphere.
2. Burning a magnesium strip inside a test tube that contains oxygen.

7

Giza Governorate

6<sup>th</sup> October Directorate

Answer the following questions :

**Question 1**

**A Complete the following sentences :**

1. Elements of group (7A) are called ....., and they have a valency equals .....
2. F-block consists of 2 series which are called ..... and .....
3. Thickness of ozone layer is ..... Dobson or ..... mm.
4. .... is considered as a linkage between birds and reptiles.
5. The strongest metal is ....., and strongest nonmetal is .....
6. The hottest atmospheric layer is .....

**B Give reasons for each of the following :**

1. Troposphere organizes the temperature of the Earth.
2. Group (1A) are called alkali metal.
3. In each group of the modern periodic table, the elements are similar in their chemical properties.

**C How can you locate the following elements in the modern periodic table ?**

1.  $_{11}\text{Na}$

2.  $_2\text{He}$



## Question 2

**A** Put (✓) or (✗) in front of the following statements :

1. The infrared rays has a chemical effect. ( )
2. Water decomposes by electrolysis into oxygen and hydrogen. ( )
3. Acidic oxides turn litmus paper into blue. ( )
4. The first protectorate in Egypt is Blue Stone protectorate. ( )
5. Fossil record indicates that life is started on land then in sea. ( )
6. The s-block in the modern periodic table contains 2 groups. ( )

**B** Write the use (importance) for each of the following :

1. Cobalt 60.
2. Altimeter.
3. Van-Allen Belts.

**C** If you know the volume of the gas that evolves at the anode during water electrolysis is  $30 \text{ cm}^3$ , calculate the volume of the gas that evolves at the cathode and write the name of the two gases.

## Question 3

**A** Write scientific term :

1. Elements that have properties of metals and nonmetals.
2. Ability of the atom to attract the electrons of the covalent bond towards itself.
3. Weak electrostatic attraction that arises between molecules of water.
4. Continuous increase in the Earth temperature.
5. Dying out of all member of certain species.
6. The scientist who discovered the main energy levels.

**B** Complete the following equations :

1.  $\text{CO}_2 + \text{H}_2\text{O} \longrightarrow \dots\dots\dots$
2.  $2\text{H}_2\text{O} \xrightarrow{\text{electrolysis}} \dots\dots\dots + \dots\dots\dots$
3.  $\text{Br}_2 + 2\text{KCl} \longrightarrow \dots\dots\dots$

**C** Cross out the odd one :

1.  $\text{F}_2 / \text{Br}_2 / \text{Cl}_2 / \text{Na}$

2. s-block / p-block / d-block / m-block.



**Question 4****A** Choose the correct answer :

- Metal oxides are called ..... oxides.  
a. acidic                      b. amphoteric                      c. basic                      d. salty
- Transition elements start to appear in period number .....  
a. 2                      b. 4                      c. 3                      d. 6
- The region between mesosphere and thermosphere is called .....  
a. mesopause.                      b. stratopause.                      c. thermopause.                      d. troposphere.
- A type of ultraviolet rays that is absorbed completely (100%) in ozone layer is ..... UV.  
a. far                      b. near                      c. medium                      d. thermal
- All the following are endangered species, except .....  
a. panda bear.                      b. quagga.                      c. bald eagle.                      d. ibis bird.
- ..... is from noble gases.  
a. Cesium                      b. Sodium                      c. Neon                      d. Potassium

**B** Give an example for each of the following :

- Extinct animal.
- Greenhouse gas.
- Cast fossil.

**C** Compare between : Biological pollution and Chemical pollution of water (regarding harms).**8 Giza Governorate**

Kerdasa Directorate

Answer the following questions :

**Question 1****A** Choose the correct answer :

- Mendeleev arranged elements in an ascending order according to their ..... , while Moseley arranged the elements in an ascending order according to their .....  
a. atomic number – atomic weight.                      b. atomic weight – atomic number.  
c. atomic weight – atomic weight.                      d. atomic number – atomic number.



2. The transition elements starting to appear from period ....., and they lie at the ..... of the periodic table.
  - a. 3-upper                      b. 4-middle                      c. 4-upper                      d. 4-bottom
3. The atomic number of the element which lies in period (3) and group (7A) is .....
  - a. 15                      b. 17                      c. 10                      d. 7
4. Each period in the modern periodic table starts with ....., and ends with .....
  - a. metal-nonmetal.                      b. metal-metalloid.
  - c. metal-metal.                      d. metal-Nobel gas.

**B Arrange the following ascendingly :**

1.  $^{23}_{11}\text{Na}$ ,  $^{39}_{19}\text{K}$ ,  $^{27}_{13}\text{Al}$ ,  $^{24}_{12}\text{Mg}$  (according to their atomic size)
2.  $^9_9\text{F}$ ,  $^{35}_{35}\text{Br}$ ,  $^{53}_{53}\text{I}$ ,  $^{17}_{17}\text{Cl}$  (according to their nonmetallic properties)
3. Fish, Mammoth, Trilobite, Archaeopteryx. (according to their appearance on the life)
4. Types of ultraviolet rays : (Far, Medium and Near) (according to their wave length)

**C Problem :**

Calculate the collected volume of the gas at the negative pole, if you know that the collected volume of the gas at the positive pole was  $5 \text{ cm}^3$ .



**Question 2**

**1 Complete the following sentences :**

1. .... is an extinct bird, while ..... is an endangered bird.
2. .... is radioactive isotope which is used in preservation of food because it emits ..... ray.
3. The type of bonds between water molecules are ....., while the type of bonds between its atoms are .....
4. If the atomic number of an element is 15, this means that it lies in period number ..... and group number .....



**B** Show by a chemical equations, How to obtain each of the following :

1. Sodium chloride from sodium metal.
2. Magnesium hydroxide from magnesium metal.

**C** Classify each of the following :

1.  ${}_4\text{Be}$ ,  ${}_1\text{H}$ ,  ${}_5\text{B}$ ,  ${}_8\text{O}$  (into : metals , nonmetals and metalloids).
2. Dinosaur's eggs fossil – Fern fossil – Ammonites fossil – Amber fossil.  
(into : different types of fossils)

### Question 3

**A** Complete the following table :

	Stratosphere	Troposphere
Thickness	..... (1) .....	..... (2) .....
Temperature (at its top)	..... (3) .....	..... (4) .....
Pressure (at its top)	..... (5) .....	..... (6) .....
Air movement	..... (7) .....	..... (8) .....

**B** Give reasons for each of the following :

1. Elements of the same group in the modern periodic table have the same chemical properties.
2. Sulphur dioxide is an acidic oxide.
3. Stopping manufacturing of concord aeroplanes.
4. Liquefied nitrogen is used in preservation of cornea of the eye.

**C** Mention the use (importance) of each of the following :

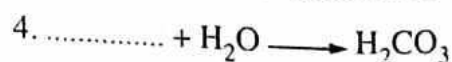
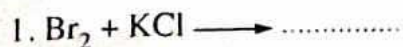
1. Altimeter.
2. Ionosphere.

### Question 4

**A** Write the scientific term for the following statements :

1. The ability of the atom in a covalent molecule to attract the electrons of the bond.
2. Safe areas which established to protect the endangered species in their homeland.
3. The mammal that is considered the midway between horse and zebra.
4. The path of energy from a living organism to another in an ecosystem.

**B** Complete the following chemical equations :





**C Problem :**

Find the temperature at a point of height 3.5 kilometers above the sea level, if the temperature at the sea level is  $23^{\circ}\text{C}$ .

**9 Alexandria Governorate**

Taymour English School

Answer the following questions :

**Question 1****A Write the scientific term :**

1. They are safe areas established to protect the endangered species in their homeland.
2. It is a phenomenon that appears as brightly light curtains seen at both poles of the Earth.
3. Block of elements that arranged into two horizontal series at the lower part of the modern periodic table.
4. It is the arrangement of metals in a descending order according to the degree of their chemical activity.
5. Curved lines that join the points of equal pressure in the atmospheric pressure maps.
6. The rays that are trapped in the troposphere causing greenhouse effect.

**B Give one example for :**

1. An element that has zero electronegativity.
2. An endangered organism.
3. A pollutant that causes both ozone layer erosion and global warming.
4. A semi-metal element that is used in electronic devices.
5. An amphoteric oxide.

**C Problem :**

Calculate the temperature at a height 7252 meters above the sea level. (Knowing that the temperature at the sea level equals  $22^{\circ}\text{C}$ ).

**Question 2****A Give reasons for :**

1. All bases are not considered alkalis.
2. Pilots prefer to fly their aeroplanes in the lower part of stratosphere layer.
3. Desert is considered as a simple ecosystem.
4. Bald eagle is called by this name.

**B An element which is located in period (3) and group (5A).**

Find its atomic number and the name of its block in the modern periodic table.



**C** Correct the underlined words :

1. Quagga is a link between reptiles and birds.
2. Covalent bonds between water molecules is a strong bond.
3. Mesosphere is the ozonic layer as it contains a limited amounts of ozone.
4. Mendeleev discovered the positive protons.

**Question 3**

**A** Mention one use for :

1. Aneroid barometer.
2. Liquified Nitrogen.
3. Van-Allen Belts.

**B** What is the effect of the following on health ?

1. Throwing human wastes in water.
2. Throwing mercury in water.
3. Filling plastic bottles with tap water.

**C** Show the effect of diluted hydrochloric acid on both magnesium and sulphur. (with the balanced chemical equation).

**D** Choose the correct answer :

1. The transition elements are found in .....  
 a. s-block.                      b. d-block.                      c. f-block.                      d. p-block.
2. The correct order to arrange  ${}_5\text{B}$ ,  ${}_{20}\text{Ca}$ ,  ${}_{12}\text{Mg}$  and  ${}_{13}\text{Al}$ , descendingly according to the atomic size is .....  
 a.  $\text{Ca} > \text{Al} > \text{B} > \text{Mg}$                       b.  $\text{Ca} > \text{Al} > \text{Mg} > \text{B}$   
 c.  $\text{Ca} > \text{Mg} > \text{Al} > \text{B}$                       d.  $\text{B} > \text{Al} > \text{Mg} > \text{Ca}$
3. The element that is found in group (1A) which and kept under paraffin oil and not kept under kerosene is .....  
 a. sodium.                      b. cesium.                      c. lithium.                      d. bromine.
4. The temperature in troposphere reaches ..... at its top.  
 a.  $0^\circ\text{C}$                       b.  $-90^\circ\text{C}$                       c.  $1200^\circ\text{C}$                       d.  $-60^\circ\text{C}$
5. The element which emits rays and can be used in preservation of food is .....  
 a. Cobalt 60 which emits alpha rays.                      b. Cobalt 60 which emits gamma rays.  
 c. Cobalt 50 which emits alpha rays.                      d. Cobalt 70 which emits gamma rays.
6. The strongest nonmetal in the modern periodic table, is .....  
 a. sodium.                      b. cesium.                      c. fluorine.                      d. astatine.
7. The normal atmospheric pressure is ..... at the sea level.  
 a. 100 mbar                      b. 101325 mbar                      c. 1013.25 bar                      d. 1013.25 mbar



### Question 4

#### A Complete the following sentences :

- ..... is a solidified resinous material which was secreted by pine trees in the old ages.
- $\text{Cl}_2 + 2 \text{KBr} \longrightarrow \text{.....} + \text{.....}$
- Hydrogen gas is collected above ..... during water electrolysis.
- Petrified woods considered as fossils in which the organic material of trees is replaced with .....
- ..... is an example of complete body fossil which were buried under .....
- ..... and foraminifera are microfossils, their presence indicates the formation of .....

#### B Write a property for :

- Potassium.
- Tropical forest.

#### C Answer the following questions :

- Show by equations how ozone is formed.
- Write an achievement for Bohr.
- Mention one difference between helium and fluorine.

### 10 Alexandria Governorate

El-Agamy Directorate

Answer the following questions :

### Question 1

#### A Choose the correct answer :

- All the following are greenhouse gases, except .....  
 a. nitrous oxide.      b. water vapour.      c. carbon dioxide.      d. methyl bromide.
- The measuring unit of atomic radius is .....  
 a. picometer.      b. Dobson.      c. gm.      d.  $\text{cm}^3$
- From the old extinct animals, .....  
 a. panda bear.      b. bald eagle.      c. mammoth.      d. quagga.
- From the examples of amphoteric oxide .....  
 a.  $\text{CO}_2$       b.  $\text{Al}_2\text{O}_3$       c.  $\text{MgO}$       d.  $\text{N}_2\text{O}$



5. The inert gas that exists in period three has atomic number equals .....  
 a. 3                                      b. 18                                      c. 10                                      d. 7
6. The scientist who was discovered the main energy levels, .....  
 a. Bohr.                                      b. Mosley.                                      c. Mendeleev.                                      d. Rutherford.

**B Give reasons for :**

1. Silicon slides are used in the manufacture of electronic devices.
2. El-Mokattam mountain was a sea floor since 35 million years.
3. The lower part of stratosphere is suitable for flying the aeroplane.
4. The water is polar compound.

**Question 2**

**A Write the scientific term of the following :**

1. Thinning or losing parts of the ozone layer at the south pole.
2. Dying out all members of one species of living organisms.
3. The ability of an atom in a covalent molecule to attract the electrons of bond toward itself.
4. Safe area that are established to protect endangered species in their homeland.
5. The arrangement of metals in descending order according to their chemical activity.
6. A water pollutant that causes the death of brain cells.

**B Give one difference between the following :**

1. Acidic oxides and basic oxides.
2. Thermosphere and mesosphere.
3. Simple ecosystems and complicated ecosystems.

**C What's meant by ... ?**

1. Metalloids.
2. Fossils.

**Question 3**

**A Complete the following sentences :**

1. The transition elements start to appear from period number ....., and consists of ..... groups.
2. Ultraviolet radiations has ..... effect, and inferared rays has ..... effect.
3. Archaeopteryx fossil is a link between ..... and .....
4. The new number of group (6A) is ....., and the new number of group zero is .....
5. Mesopause is the area between ..... layer and ..... layer.



**B** Locate the following elements in the modern periodic table :

1.  $_{10}\text{Ne}$

2.  $_6\text{C}$

3.  $_{14}\text{Si}$

4.  $_3\text{Li}$

5.  $_{20}\text{Ca}$

**C** Write the balanced chemical equations of the following :

1. Burning a piece of coal.
2. Magnesium with diluted hydrochloric acid.
3. Sodium with water.
4. Chlorine with potassium bromide.

### Question 4

**A** Put (✓) or (✗) in front of the following statements, then correct the wrong ones :

1. Yellowstone protectorate established to protect panda bear from extinction. ( )
2. Index fossils are used to determine the age of sedimentary rocks. ( )
3. Ionosphere layer lie at height 20 km from the sea level. ( )
4. The liquid halogen is chlorine. ( )
5. The atmospheric pressure decreases by increasing the altitude from the sea level. ( )
6. Traces indicate the activity of living organisms during their life. ( )

**B** What happens when ... ?

1. Solidification of resinous matter that secreted from pine tree in old geological age on an insect.
2. Van-Allen Belts scattering the harmful cosmic radiations.
3. Absence of one member species from a simple ecosystem.

**C** Problem :

If the temperature at the sea level  $26^\circ\text{C}$ , find the temperature at the top of a mountain with a height equals 4000 m.

## 11 Alexandria Governorate

El-Montazah Directorate

Answer the following questions :

### Question 1

**A** Complete the following :

1. From the basic oxides ....., while ..... is an example of acidic oxide.
2. Most weather phenomena occur in the ..... layer, while meteors are formed in ..... layer.



- Chlorine can replace ..... and ..... in a solution of their salts.
- In group (1A) the lowest active metal is ....., while the most active element is .....

**B** Mention the following :

- A solid halogen.
- An endangered plant.
- A kind of ultraviolet rays absorbed completely by the ozone layer.

**C** Problem :

If the temperature at the foot of a mountain equals  $13^{\circ}\text{C}$ . Find the temperature at its top if its height equals 2 km.

**Question 2**

**A** Choose the correct answer :

- ..... indicates the extinction.  
a. Fossils                      b. Protectorate                      c. Evolution                      d. Rocks
- Increasing the ratio of ..... element in drinking water causes blindness.  
a. lead                      b. mercury                      c. arsenic                      d. boron
- The scientist ..... discovered that the nucleus of an atom contains positive protons.  
a. Rutherford                      b. Moseley                      c. Mendeleev                      d. Bohr
- All the following elements are located in the same group, except .....  
a.  $_{19}\text{K}$                       b.  $_{11}\text{Na}$                       c.  $_{12}\text{Mg}$                       d.  $_{3}\text{Li}$
- A halogen locates in the second period, so its atomic number equals .....  
a. 7                      b. 9                      c. 17                      d. 19
- All the following gases are greenhouse gases, except .....  
a.  $\text{H}_2\text{O}$                       b.  $\text{CO}_2$                       c.  $\text{N}_2\text{O}$                       d.  $\text{SO}_2$

**B** Show by balanced chemical equation each of the following :

- Reaction of bromine with potassium iodide.
- Reaction between magnesium and dilute hydrochloric acid.

**C** Mention one importance of :

- Liquefied nitrogen.
- Methyl bromide gas.



### Question 3

**A** Correct the underlined words :

1. Each period in the modern periodic table, ends with a nonmetal.
2. The commercial name of  $\text{CaF}_2$  is calcium fluoride.
3. The complete body fossil of mammoth is preserved in amber.
4. The temperature decreases to  $90^\circ\text{C}$  at the end of the troposphere layer.
5. The measuring unit of the atomic size is cm.
6. The transition elements start to appear at period number 3.

**B** Locate the following elements in the modern periodic table :

1.  ${}_9\text{F}$

2.  ${}_{13}\text{Al}$

**C** Mention one difference between :

1. Simple ecosystem and complicated ecosystem.
2. Altimeter and aneroid.

### Question 4

**A** Write the scientific term :

1. The ability of an atom of a covalent molecule to attract the electrons of the chemical bond toward itself.
2. The continuous decrease in the number of a certain species until they all die out.
3. The layer that contains charged ions, that is used in wireless communication.
4. They are bonds exist between water molecules.
5. The weight of air column of an atmospheric height on a unit area.

**B** Give reasons for :

1. Water have a high boiling point.
2. Piolets prefer to fly their planes at the lower part of the stratosphere layer.
3. Mendeleev considered that isotopes are different elements.

**C** Cross out odd word, then write the scientific term of the other :

1. Bald eagle / Rhinoceros / Ibis bird / Quagga.
2.  ${}_{12}\text{Mg}$  /  ${}_{13}\text{Al}$  /  ${}_{11}\text{Na}$  /  ${}_3\text{Li}$
3. Neon / Nitrogen / Helium / Argon.



## 12 Alexandria Governorate

East Alexandria Directorate

Answer the following questions :

## Question 1

A Complete the following sentences :

1. The number of elements in Mendeleev's periodic table is ..... elements.
2. The scientist ..... discovered the main energy levels of the atom.
3. Fossils are often found in ..... rocks.
4. The normal atmospheric pressure equals ..... mbar at the sea level.

B Write the scientific term of each of the following sentences :

1. The block that contains the groups from (3A) to (0).
2. The polar compound that consists of one oxygen atom and two hydrogen atoms.
3. The number of positive protons inside the nucleus of the atom of an element.
4. The halogen which exists in a liquid state.

C From the opposite figure :

1. What is the name of this group ?
2. What is the valency of its elements ?

X
II Y
Z
L
M

## Question 2

A Choose the correct answer :

1. Complete body fossils of insects are found preserved in .....  
a. ammonites.      b. amber.      c. igneous rocks.      d. air.
2. All of the following gases are greenhouse gases, except .....  
a.  $O_2$       b.  $CO_2$       c.  $N_2O$       d.  $CH_4$
3. There are ..... bonds among water molecules.  
a. hydrogen      b. covalent      c. ionic      d. metallic
4. .... is not considered from halogens.  
a. Sodium      b. Chlorine      c. Fluorine      d. Iodine

B Put (✓) or (✗) in front of the following statements :

1. Papyrus is considered as an extinct plant. ( )
2. Cobalt 60 emits gamma rays. ( )
3. The complete body fossil of mammoth found preserved in snow. ( )
4. Both oil and sugar are covalent compounds. ( )



**C Compare between :**

Mesosphere and thermosphere "concerning : importance – temperature at its top".

**Question 3**

**A Choose from column (B) what suits it in column (A) :**

(A)	(B)
1. Sodium	a. is used in extinguishing fires.
2. Carbon	b. is a metal.
3. Halon	c. is used in making foam backing.
4. Freon	d. is a nonmetal.
1. ....	2. ....
3. ....	4. ....

**B Correct the underlined words :**

- The thickness of ozone layer in the stratosphere layer is (60) km.
- The element which is located in period (3) and group (3A) is sB.
- Mesopause is located between stratosphere and mesosphere layers.
- Tap water doesn't affect litmus paper.

**C Give a reason for the following :**

Liquefied nitrogen is used in the preservation of cornea of the eye.

**Question 4**

**A Cross out the odd word :**

- Dinosaur / Panda bear / Dodo Bird / Quagga.
- Mosses / Reptiles / Invertebrates / Fish.
- Helium / Neon / Hydrogen / Argon.
- Silicon / Bromine / Boron / Arsenic.

**B Give an example for each of the following :**

- Traces of an old living organism.
- Negative effects of global warming phenomenon.
- One of the natural water pollutants.
- A basic oxide.

**C Express with a balanced chemical equation :**

The reaction between magnesium and diluted hydrochloric acid.



Answer the following questions :

**Question 1**

**A** Complete the following sentences :

1. In the modern periodic table, elements which are similar in their chemical properties are located in the same .....
2. In the modern periodic table, d-block contains ..... elements.
3. An example of polar compounds is ....., that has a neutral effect on litmus solution.
4. The strongest nonmetal element locates in group ..... in the modern periodic table.

**B** Give an example for each of the following :

1. An endangered plant.
2. A pollutant of ozone layer.
3. An extinct non-flying bird.
4. An element that doesn't react with water.

**C** Locate the following elements in the modern periodic table :

1.  $_{11}\text{Na}$

2.  $_{20}\text{Ca}$

**Question 2**

**A** Write the scientific term for each of the following :

1. They are safe areas established to protect endangered species in their homeland.
2. The descending arrangement of metals according to their chemical activity.
3. The region between troposphere and stratosphere.
4. The block that contains the series of lanthanides and actinides.

**B** Mention the measuring unit for each of the following :

1. The atomic size of the element.
2. The degree of ozone.
3. The atmospheric pressure.

**C** Problem :

If the temperature at the sea level is  $30^{\circ}\text{C}$ . Find the temperature at a height of 6 km.



## Question 3

A Choose the correct answer :

- All of the following are greenhouse gases, except .....  
a.  $\text{CO}_2$                       b.  $\text{O}_2$                       c.  $\text{N}_2\text{O}$                       d.  $\text{CH}_4$
- p-block contains ..... groups.  
a. 10                      b. 2                      c. 6                      d. 8
- The ..... replaces the wood material, part by part of an old tree.  
a. copper                      b. iron                      c. sodium                      d. minerals
- During electrolysis of water the volume of evolved oxygen gas is ..... the volume of evolved hydrogen gas.  
a. equal to                      b. half                      c. twice                      d. quarter

B Complete the following equations :

- $\text{Cl}_2 + 2 \text{KBr} \longrightarrow \dots + \dots$
- $\text{MgO} + \text{H}_2\text{O} \longrightarrow \dots$
- $\text{CO}_2 + \dots \longrightarrow \text{H}_2\text{CO}_3$

C Mention one difference between :

Simple ecosystem and complicated ecosystem.

## Question 4

A Correct the underlined words :

- When water freezes, its density increases.
- The modern periodic table contains 100 elements.
- Methyl bromide gas used in extinguishing fires.
- The complete body fossil of mammoth is found preserved in amber.

B Put (✓) or (✗) in front of the following statements, then correct the wrong ones :

- Infrared radiation has a chemical effect. ( )
- Altimeter is used for determining the possible day weather. ( )
- Foraminifera are from microfossils. ( )
- Meteors are formed in stratosphere layer. ( )

C Give a reason for each of the following :

- Pilots prefer to fly their planes in the lower part of stratosphere.
- Mendeleev left gaps in his periodic table.



## 14 Menofia Governorate

Shebien El-Koum Directorate

Answer the following questions :

## Question 1

A Complete the following sentences :

1. Sodium is kept under the surface of ..... to prevent its reaction with .....
2. Mesosphere layer is highly rarefied, because it contains a limited quantities of ..... and ..... gases only.
3. .... + .....  $\longrightarrow$   $\text{H}_2\text{CO}_3$
4. Fossils are used in ..... exploration and determining the age of .....

B Study the opposite figure which represents a part of the modern periodic table, then answer the following questions by using it :

${}_1\text{H}$					
${}_3\text{Li}$	${}_4\text{Be}$	${}_5\text{B}$	${}_6\text{C}$	${}_7\text{N}$	${}_8\text{O}$
${}_{11}\text{Na}$					
${}_{19}\text{K}$					

1. The element that has the highest electronegativity is .....
2. The element that has the greatest atomic size is .....
3. This part represents the group number ..... and the period number .....
4. The element which has the lowest metallic property in this group is .....

C Write the balanced chemical equation, that illustrate the reaction between chlorine and potassium bromide.

## Question 2

A Choose the correct answer :

1. The average age of the lower layers of sedimentary rocks is ..... that of its upper layers.
  - a. more than
  - b. less than
  - c. equal
2. .... contains charged particles and it has an importance in wireless communications.
  - a. Mesosphere
  - b. Stratosphere
  - c. Ionosphere
3. The kind of rays which are emitted from cobalt 60 is .....
  - a. ultraviolet rays.
  - b. infrared radiation.
  - c. gamma rays.
4. (X) is an alkali metal that reacts with oxygen to form a chemical compound known as .....
  - a.  $\text{X}_2\text{O}_2$
  - b.  $\text{X}_2\text{O}$
  - c.  $\text{XO}_2$



**B Cross out the odd word or symbol:**

1.  $\text{Al}^{+3}$  /  $\text{Na}^{+1}$  /  $\text{Mg}^{+2}$  /  $\text{O}^{-2}$
2. Dodo bird / Panda bear / Bald eagle / Papyrus plant.
3. Oxygen gas / Organic fertilizers / Animals wastes / Mercury.
4. Saint cathrine / Ras mohamed / Wadi El-Hetan / Petrified forest.

**C Problem :**

Calculate the height of a mountain if temperature at its foot is  $30^{\circ}\text{C}$  and at its top is  $-9^{\circ}\text{C}$ .

**Question 3****A Write the scientific term for each of the following :**

1. It is the weight of air column of atmospheric height on a unit area ( $1\text{m}^2$ ).
2. Replacing part by part of the wood material of an old tree by minerals to form petrified wood.
3. Elements which have the properties of both metals and nonmetals.
4. A water pollutant, which causes the death of brain cells.

**B Choose the correct word from inbetween brackets :**

(bromine – lose electron(s) – increases –  $\text{HCl}$  – decreases – iodine – gain electron(s) –  $\text{CO}_2$ )

1. The halogen which exists in a solid state is .....
2. The density of air ..... as we go up.
3. During a chemical reaction, a metal atom tend to .....
4. The most important greenhouse gas is .....

**C What is the difference between ... ?**

Simple ecosystems and complicated ecosystems.

**Question 4****A Correct the underlined words :**

1. Some salts dissolve in water forming alkalis.
2. Halons are produced among the burning of fuel of supersonic aeroplanes.
3. Amber protects the mammoth inside it from decomposition.
4. The cast is a replica of the interior details of an ancient living creature.





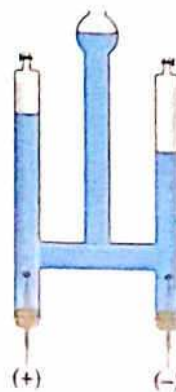


What is the symbol indicates each of the following ?

1. The element that has the most metallic property, is .....
2. The element that locates in period (3) and group (6A), is .....
3. The element that has atomic number equals 12, is .....
4. The element that gains one electron during chemical reaction, is .....

**C** The opposite figure illustrates the apparatus that is used in the electrolysis of water :

1. Write the balanced chemical equation of this process.
2. Calculate the volume of the gas at the positive pole, if the volume of the gas at the negative pole is  $5 \text{ cm}^3$ .



## Question 2

**A** Write the scientific term for each of the following :

1. The block that contains the series of lanthanides and actinides.
2. A type of ultraviolet radiation that is absorbed completely by the ozone layer.
3. Electrostatic attraction that originates between the molecules of some polar compounds.
4. Fossils indicate that the environment where they found was clear warm shallow seas.

**B** Correct the underlined words :

1. Calcium and magnesium react with hot water vapour only.
2. Some covalent compounds such as oil, can form hydrogen bonds with water molecules.
3. Part of Wadi El-Raiyan protectorate contains coloured fishes and coral reefs.
4. An ammonite fossil represents a mold of an insect.

**C** Show by chemical equations the role of ultraviolet radiation in the formation of ozone gas.

## Question 3

**A** Answer according to that in bracts :

1.  ${}^6\text{C} / {}^{11}\text{Na} / {}^8\text{O} / {}^{19}\text{K} / {}^9\text{F}$  (arrange in ascending order according to their atomic radius).
2. (Who) discovered that the nucleus of an atom contains positively charged protons.
3. There are two dangerous phenomena that facing the Earth, which are erosion of ozone layer in mesosphere and global warming in stratosphere (correct the sentence).
4. An extinct bird with small wings, and it was an easy target for hunters (name the organism).



**B Put (✓) or (✗) in front of the following statements :**

1. The nonmetallic property increase gradually as we go from top to bottom in the same period, in the modern periodic table. ( )
2. An element has atomic number equals 7, so the atomic number of the element that follow it in the same group equals 18. ( )
3. CFCs compounds are from the reasons of ozone hole and global warming. ( )
4. The atmospheric pressure increases on going under the sea level, due to decreasing the length of air column. ( )

**C Show by symbolic balanced chemical equation :**

1. The reaction of magnesium with diluted hydrochloric acid.
2. The reaction of sodium metal with chlorine gas.

**Question 4****A Cross out the odd word. Then write the scientific term of the rest :**

1. Overhunting / Environmental pollution / Meteorite impact the Earth / Destroying natural habitat.
2. Panda bear / Ibis bird / Bald eagle / Quagga.
3. Pilot prefers to fly in it / It is surrounded by Van-Allen Belts / The temperature at its top equals  $0^{\circ}\text{C}$  / Its thickness equals 37 km.
4.  ${}^2\text{He}$  /  ${}^{10}\text{Ne}$  /  ${}^{16}\text{S}$  /  ${}^{18}\text{Ar}$

**B Choose the correct answer :**

1. The chemical properties of  ${}_{20}\text{Ca}$  are similar to those of .....  
 a.  ${}_{19}\text{K}$                       b.  ${}_{12}\text{Mg}$                       c.  ${}_{15}\text{P}$                       d.  ${}_{3}\text{Li}$
2. .... in its salt solution.  
 a. Iodine replaces chlorine                      b. Iodine replaces bromine  
 c. Chlorine replaces bromine                      d. Bromine replaces chlorine
3. A liquid boils at  $100^{\circ}\text{C}$  what is the other property, which confirms that it is a pure water ? .....  
 a. Salt dissolves in it.                      b. Its density decreases on freezing.  
 c. It evaporates on heating.  
 d. It has a neutral effect on both litmus papers.
4. Luminous meteors are formed in ..... layer.  
 a. the coldest                      b. the disturbed                      c. the hottest                      d. the ozone



- C** A metallic element (M) which is located in period (3) and when it reacts with oxygen a compound its formula ( $M_2O_3$ ) is formed, what is its atomic number and what is its block in the modern periodic table.

## 16 Gharbia Governorate

Science Inspectorate

Answer the following questions :

### Question 1

- A** Complete the following sentences :

1. Fluorine and chlorine exist in a ..... state, while iodine exists in a ..... state.
2. If the volume of the evolved gas at the anode in Hofmann's voltameter is  $7 \text{ cm}^3$ , therefore the volume of the evolved ..... gas at the cathode is .....  $\text{cm}^3$ .
3. The thickness of the mesosphere layer is ..... km.
4. .... protectorate is the first established natural protectorate in Egypt.

- B** Correct the underlined words :

1. Freon is used as an insecticide to preserve stored agricultural crops.
2. Temperature decreases by (6.5°C) at 2 km above the sea level.
3. An element that is located in period (3) and group (2A), has atomic number equals (13).
4. Each period starts with a strong nonmetal, except the first period.

- C** Write the balanced chemical equations which express the following reactions :

1. Magnesium with dilute hydrochloric acid.
2. Electrolysis of water.

### Question 2

- A** Write the scientific term of the following :

1. Curved lines that join the points of equal pressure in atmospheric pressure maps.
2. Trace that indicates the remains of an old living organism after its death.
3. They are elements that have the properties of both metals and nonmetals.
4. It is a table in which the elements are arranged in an ascending order according to their atomic weights.

- B** Cross out the odd word, then write the scientific term of the others :

1.  $\text{CO}_2$  /  $\text{MgO}$  /  $\text{Na}_2\text{O}$  /  $\text{CaO}$ .
2. Lithium / Sodium / Potassium / Helium.
3. Cast / Fossil of a complete body / Fossil record / Mold.
4. Rhinoceros / Panda pear / Dodo bird / Bald eagle.



Ⓐ Put (✓) or (✗), then correct the false one(s):

1. Archaeopteryx represents a link between reptiles and mammals. ( )
2. Water and ammonia are from polar compounds. ( )
3. Aurora phenomenon appears as colored brightly light curtains seen at both north and south poles of the Earth. ( )
4. Both nitrogen ( ${}^7\text{N}$ ) and carbon ( ${}^6\text{C}$ ) are located in the same group in the modern periodic table. ( )

1. Locate the following elements in the modern periodic table :

1.  $_{10}\text{Ne}$     2.  $_{19}\text{K}$
2. Calculate the height of a mountain, if the temperature at its foot is ( $30^{\circ}\text{C}$ ) and at its top is ( $-6^{\circ}\text{C}$ ).

Old extinction - recent extinction (concerning : their causes)

**A** Choose the correct answer :

1. The complete body fossil of a mammoth is found preserved in .....  
a. amber.                      b. snow.                      c. ocean.                      d. sedimentary rocks.
2. The strongest nonmetal locates in group .....  
a. 7A                      b. 1B                      c. 1A                      d. 2A
3. All the following diseases are caused by biological water pollution, except ..... disease.  
a. liver cancer                      b. bilharzia                      c. hepatitis                      d. typhoid
4. The path of energy that transfers from a living organism to another is known as .....  
a. food web.                      b. food pyramid.                      c. food chain.                      d. food type.

1. A halogens that presents in a liquid state.
2. An endangered plant.
3. A radiation that has a thermal effect.
4. A metal that doesn't react with water.



**C Give reasons for :**

1. The tropical forest is a complicated ecosystem.
2. Not all known fossils are considered index fossils.

**17 Damietta Governorate**

Damietta Directorate

Answer the following questions :

**Question 1**

**A Complete the following sentences :**

1. The scientist Mosely arranged the elements ascendingly according to their .....
2. The strongest nonmetal element locates in group ..... in the modern periodic table.
3. Satellites rotate in .....
4. Fossils are found in ..... rocks.

**B Correct the underlined words :**

1. The element which has an atomic number equals (18) is a metallic element.
2. There are covalent bonds between water molecules.
3. MgO is an acidic oxide.
4. Each period starts with a weak metal.

**C If half the volume of the gas evolved above the anode of Hofmann's voltameter is 5 cm. calculate the volume of the gas evolved above the cathode. And how can you detect it practically ?**

**Question 2**

**A Write the scientific term for the following :**

1. The ability of an atom in the covalent compound to attract the electrons of the chemical bond towards itself.
2. A type of water pollution from dumping of the atomic (nuclear) wastes in seas and oceans.
3. It is a path of energy that transmits from a living organism to another in the ecosystem.
4. A type of ultraviolet radiation that does not penetrate the ozone layer with a percentage 100 %.

**B Mention one example for each of the following :**

- |                               |                      |
|-------------------------------|----------------------|
| 1. A covalent polar compound. | 2. A liquid halogen. |
| 3. An endangered plant.       | 4. An extinct bird.  |

**C Calculate the temperature at a point of height 2 km. above the sea level, if the temperature at the sea level is 24°C.**



**Question 3****A** Choose the correct answer :

- The chemical properties of calcium ( $_{20}\text{Ca}$ ) are similar to those of .....  
a.  $_{19}\text{K}$                       b.  $_{3}\text{Li}$                       c.  $_{12}\text{Mg}$                       d.  $_{25}\text{Mn}$
- The ozone layer is found in .....  
a. troposphere.              b. stratosphere.              c. mesosphere.              d. thermosphere.
- Which of the following elements react with diluted hydrochloric acid ? .....  
a. C                      b. Cl                      c. S                      d. Zn
- Complete body fossils of insect are found preserved in .....  
a. ammonites.              b. amber.                      c. igneous rocks.              d. water.

**B** Put (✓) or (✗) in front of the following sentences :

- The atomic size increases in the same group in the modern periodic table by increasing the atomic number. ( )
- Global warming is a dangerous phenomenon that faces Earth's atmosphere. ( )
- Sodium is used in manufacturing of electronics. ( )
- Infrared radiation has a chemical effect. ( )

**C** Give a reason for :

Although sugar is a covalent compound, it dissolves in water.

**Question 4****A** Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Archaeopteryx	a. is considered the mid way between horse and zebra.
2. Dobson	b. is an atom of a nonmetallic element which gain electrons.
3. Quagga	c. is a link between reptiles and birds.
4. Negative ion	d. is an atom of metallic element which lose electrons.
	e. is the unit of measuring the degree of ozone.

1. ....

2. ....

3. ....

4. ....

**B** Correct the underlined words :

- Meteors burnt in thermosphere layer.
- Both of K and Mg don't react with water.
- Dinosaur's eggs and tooth are examples of cast fossils.
- The element ( $_{12}\text{X}$ ) is located in period (2) and group (3A) in the modern periodic table.



**C What happens when ... ?**

Putting a piece of sodium in water.

**18 Kafr El-Sheikh Governorate**

Desouk Directorate

Answer the following questions :

**Question 1****A Choose the correct answer :**

- ..... is the scientist who discovered the main energy levels in the atom.  
a. Moseley                      b. Bohr                      c. Hoffman                      d. Mendeleev
- ..... is/are used in extinguishing fires.  
a. Methyl bromide    b. Halons                      c. Nitrogen oxides    d. UV radiations
- Fossils are found in ..... rocks.  
a. sedimentary              b. igneous                      c. metamorphic              d. magnetic

**B Give an example for :**

- Microfossil.
- Extinct animal.
- Metalloid.

**C What happens if ... ?**

- Melting the snow of south and north poles of the Earth.
- Eating fish containing high concentration of lead.

**Question 2****A Put (✓) or (✗) in front of the following statements :**

- The atomic size increases in the same group in the modern periodic table by increasing the atomic number. ( )
- Mixing human and animals wastes with water causes chemical pollution for water. ( )
- Ferns fossils indicate that the environment was a hot and rainy area. ( )

**B Write the scientific term :**

- Safe places established to protect endangered species.
- The region between troposphere and stratosphere.
- The ascending order of the elements according to their atomic weights.

**C Give reasons for :**

- Although sugar is a covalent compound, it dissolves in water.
- The lower part of the stratosphere is suitable for flying airplanes.

**Question 3****A** Complete the following :

1. .... is a liquid halogen, and .... is a solid halogen.
2. In group (1A) .... is the least active element, while .... is most active one.
3. The most weather phenomena occur in .... layer, but meteors are formed in .... layer.

**B** Cross out the odd word :

1. Dodo bird / Quagga / Mammoth / Bald eagle.
2. Neon / Nitrogen / Argon / Helium.
3. Oxygen / Nitrous oxides / Water vapour / Carbon dioxide.

**C** Calculate the height of a mountain, if the temperature at its foot is (30°C) and at its top is (-9°C).**Question 4****A** Complete these chemical equations :

1.  $\text{Mg} + 2\text{HCl} \xrightarrow{\text{dil.}}$  ..... + .....
2. .... + .....  $\longrightarrow \text{H}_2\text{CO}_3$ .
3.  $2\text{Na} + 2\text{H}_2\text{O} \longrightarrow$  ..... + .....

**B** For the element ( ${}_{11}^{23}\text{X}$ ) find :

1. Its period number.
2. Its group number.
3. The block which it belongs to.

**C** Mention one difference between :

1. Altimeter and aneroid. (according to their uses)
2. Simple ecosystem and complicate ecosystem.

**19 Behira Governorate**

Science Inspectorate

Answer the following questions :

**Question 1****A** Complete the following sentences :

1. .... metal reacts with hot water vapour, while .... metal doesn't react with water.
2. Water molecules are linked together by ..... bond, due to the higher ..... of oxygen with respect to hydrogen.



3. .... is the second atmospheric layer, and it is also called the .....
4. .... and .... are examples of remains of an old living organism after death.

**B** Correct the underlined word :

1. Chemical pollution of water causes many diseases such as typhoid and hepatitis.
2. Halogens locate in s-block in the modern periodic table.
3. Magnesium reacts with dilute HCl and Cl<sub>2</sub> gas evolves.
4. The number of energy levels occupied by electrons in the atom of an element indicates its group number.

**C** How can you differentiate chemically between magnesium oxide and carbon dioxide ?  
(write the balanced chemical equation)

**Question 2**

**A** Write the scientific terms for each of the following :

1. Elements of zero group in the modern periodic table.
2. The measuring unit of atomic radius which is used as a measure for the atomic size.
3. A kind of radiations that can be break down oxygen molecule, forming free oxygen atoms.
4. Safe places that are specified to protect the endangered species in their original habitat.

**B** Mention one example for :

- |                      |                      |
|----------------------|----------------------|
| 1. Alkali metal.     | 2. Endangered plant. |
| 3. A fossil of cast. | 4. Halogen.          |

**C** Calculate the height of a mountain, if the temperature at its foot is 30°C and at its top is (-9°C).

**Question 3**

**A** Choose the correct answer :

1. .... in its salt solution.
 

a. Chlorine replaces bromine	b. Bromine replaces fluorine
c. Iodine replaces chlorine	d. Iodine replaces fluorine
2. Increasing the concentration of ..... in drinking water causes blindness.
 

a. lead	b. arsenic	c. mercury	d. chlorine
---------	------------	------------	-------------

3. .... compounds are known commercially as feron.
- a. Halons                      b. Nitrogen oxides                      c. Halogens                      d. Chlorofluorocarbons
4. Complete body fossils of insects found preserved in .....
- a. ammonite.                      b. amber.                      c. igneous rocks.                      d. carbon dioxide.

**B** Choose from column (B) what is suitable in column (A) in the following tables :

(A)	(B)
1. Altimeter	a. used in the food preservation.
2. Aneroid	b. used to determine today's weather.
3. Liquefied nitrogen	c. used to measure altitude of planes.
4. Cobalt 60	d. used to determine the age of rocks.
	e. used in the preservation of the cornea of the eye

1. ....                      2. ....                      3. ....                      4. ....

**C** Give reasons for :

1. Elements of the same group in the modern periodic table have the same chemical properties.
2. Alkali metals are kept under kerosene in the lab.

### Question 4

**A** Cross out the odd word, then write the scientific term of the other :

1. Silver / Sodium / Iron / Calcium.
2. Methyl bromide / Carbon dioxide / Water vapour / Methane gas.
3. Trilobite fossil / Nummulites fossil / Fossil of ferns / Ammonites fossil.
4. Quagga / Dodo bird / Mammoth / Bald eagle.

**B** Write the number that indicates each of following :

1. The normal atmospheric pressure at the sea level.
2. The number of groups in p-block.
3. The boiling point of liquefied nitrogen.
4. The age of whale's fossils in Wadi El-Raiyan.

**C** If the volume of gas produced from the electrolysis of water at cathode equals  $8 \text{ cm}^3$ , Calculate the volume of gas produced at anode and write its name.



Answer the following questions :

### Question 1

A Complete the following sentences :

1. The coldest layer in the atmosphere is called ..... , while the hottest layer is called .....
2. Biological water pollution causes the infection by many diseases such as ..... , hepatitis and .....
3. From the old extinct animals is ..... , while from the recent extinct animals is .....
4. Fluorine exists in ..... state, while iodine exists in ..... state.

B The following table illustrates the location of some elements in the modern periodic table, fill in the empty spaces :

	Atomic number	Period number	Group number
Cl	17	..... (1) .....	7A
Ne	..... (2) .....	2	Zero
Mg	12	..... (3) .....	..... (4) .....

C Give reasons for the following :

1. In groups of modern periodic table, the atomic size increases by increasing the atomic number.
2. Water is a polar compound.

### Question 2

A Choose the correct answer :

1. Fossils are often found in ..... rocks.  
a. metamorphic      b. sedimentary      c. igneous      d. liquid
2. High boiling point of water is due to the presence of ..... bonds between its molecules.  
a. single covalent      b. double covalent      c. hydrogen      d. ionic
3. The normal atmospheric pressure equals ..... mbar at the sea level.  
a. 76      b. 1013.25      c. 1.013      d. 13
4. Alkali metals are considered from ..... block elements.  
a. s      b. p      c. d      d. f

5. Ras Mohamed protectorate includes .....  
 a. rare fish. b. whales' fossils.  
 c. rare coral reefs. d. rare fish and coral reefs.
6. When sodium reacts with water, ..... gas evolves.  
 a. nitrogen b. oxygen c. hydrogen d. carbon dioxide
7. Ozone protects the Earth from harmful effect of ..... rays.  
 a. ultraviolet b. infrared  
 c. thermal d. infrared and ultraviolet
8. All these alkali metals float on water surface, except .....  
 a. K b. Na c. Li d. Cs

**B Write the scientific term :**

1. Fossils that lived for a short period of time and had a wide geographical range.
2. The group in the modern periodic table that its elements react with metals forming salts.
3. The process of replacing the wood material of trees part by part by minerals to form petrified fossils.
4. The radioactive element which is used in food preservation.

**C Find the temperature on the top of a mountain, if the temperature at its foot equals 40°C and its height equals 2 km.**

**Question 3**

**A Put (✓) or (✗) in front of the following statements :**

1. Fern fossils indicate that the environment where they lived was a sea floor. ( )
2.  $\text{CO}_2 + \text{H}_2\text{O} \longrightarrow \text{H}_2\text{CO}_3$  ( )
3. Meteors are formed in mesosphere layer due to friction with air molecules. ( )
4. Mendeleev arranged elements in an ascending order according to their atomic numbers. ( )
5. The transition elements start to appear at the fourth period of the modern periodic table. ( )
6. Ozone layer is found in troposphere layer. ( )
7. Mosley classified the elements of each main group into 2 subgroups A & B. ( )
8. Papyrus is considered as an endangered plant. ( )



**B** Cross out the odd word, then write the scientific term for the others :

1. Silicon / Boron / Arsenic / Iodine.
2. Halons / Water vapour / methane gas /  $\text{CO}_2$

**C** Mention the role of the following scientists :

1. Rutherford.
2. Bohr.

### Question 4

**A** Mention an example for each of the following :

1. Microfossils
2. A layer suitable for flying a plane.
3. A simple ecosystem.
4. A metalloid used in making electronic devices.

**B** Match from column (B) what suits it in column (A) :

(A)	(B)
1. Sulphur	a. is used to measure atmospheric pressure.
2. Polluted water with mercury	b. reacts with oxygen producing acidic oxide
3. Mammoth	c. causes blindness.
4. Barometer	d. causes death of brain cells.
	e. is a complete body fossil.

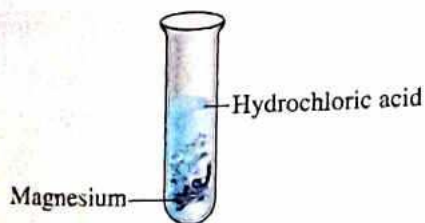
1. ....

2. ....

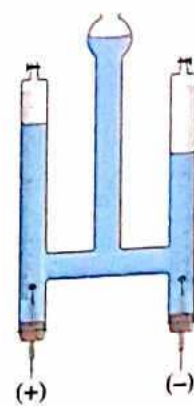
3. ....

4. ....

**C** Study the following figures, then answer the questions :



1. Write the balanced symbolic equation of the reaction.



2. This device is used for ....., and the volume of the evolved gas above the negative pole equals .....  $\text{cm}^3$  if the volume of other gas equals  $10 \text{ cm}^3$ .

**21 Port Said Governorate****Port Said Directorate**

Answer the following questions :

**Question 1**

**A** Replace each of the following statement by a scientific term :

1. The ability of the atom in the covalent molecule to attract the electrons of the chemical bond towards itself.
2. The descending arrangement of metals according to their chemical activity.
3. Brightly coloured light curtains which appear at both north and south poles of the Earth.
4. Traces and remains of the old living organisms that are preserved in sedimentary rocks.

**B** Join the two pairs :

(A)	(B)
1. Liquefied nitrogen	a. is used in manufacturing of computers.
2. Silicon slide	b. is used in food preservation.
3. Radioactive cobalt 60	c. is used as an insecticide.
4. Liquid sodium	d. is used in the cornea preservation.
	e. is used in transferring heat from the inside of the nuclear reactor to its outside.

1. ....

2. ....

3. ....

4. ....

**C** What happens when ... ?

Putting a piece of sodium in water. (Answer only by using a balanced chemical equation)

**Question 2**

**A** Complete the following sentences :

1. Eating fish which contains high ratio of ..... causes the death of the brain cells, while drinking water which contains high ratio of ..... causes infection by liver cancer.
2. Transition elements start to appear at the ..... period and they include ..... groups.
3. All atmospheric phenomena occur in the ..... layer of the atmosphere, while ..... is the layer where satellites float around the Earth.
4. Fossils can be used in ..... exploration and to determine the age of .....

**B** Put (✓) or (✗) opposite to each of the following statements :

1. The atomic size of the elements of the same group in the modern periodic table, increases by the increase of elements atomic numbers.

( )



2. The modern periodic table consists of 9 horizontal periods and 13 vertical groups. ( )
3. Archaeopteryx fossil links between reptiles and mammals. ( )
4. Quagga is a recent extinct animal. ( )

**C** Mention the importance or the use of :

1. Altimeter.
2. Halons.

### Question 3

**A** Choose the correct answer :

1. .... is considered as one of the halogens .  
 a. Sodium                      b. Calcium                      c. Helium                      d. Chlorine
2. There are .... bonds between water molecules.  
 a. covalent                      b. ionic                      c. hydrogen                      d. ionic and covalent
3. Meteors are formed in the .... layer of the atmosphere.  
 a. ionosphere                      b. tropopause                      c. mesosphere                      d. stratopause
4. One of the examples of a complete body fossil is the .....  
 a. dinosaur tooth.                      b. mammoth.  
 c. ammonite.                      d. coral.

**B** Mention the name of the scientist who :

1. Discovered that the nucleus of an atom contains positively charged protons.
2. Discovered the main energy levels in the atom.
3. Postulated that the thickness of the ozone layer is 3 mm only under normal atmospheric pressure at 0°C.
4. Discovered that the periodicity of elements properties is related to their atomic number, not to their atomic weights.

**C** Compare between :

Acidic oxides and basic oxides (in terms of solubility in water).

### Question 4

**D** Cross out the odd word and explain how other words are related.

1. Boron / Silicon / Sodium / Germanium.
2. Methyl bromide / Carbon dioxide / Water vapour / Methane gas.
3. Panda bear / Rhinoceros / Dodo bird / Bald eagle.
4. Mould / Angiosperms / Cast / Complete body fossil.







**C Give reasons for :**

The atomic size of elements in the same period decreases as their atomic number increases.

**Question 4****A Mention each of the following :**

1. Measuring unit of the atomic size of elements.
2. A pollutant of ozone layer.
3. A simple ecosystem.
4. A link between reptiles and birds.

**B Mention the name the scientist or the organism that is indicated by each of the following :**

1. Discovered that the atom has 7 energy levels.
2. Postulated that the thickness of ozone layer is 3 mm at STP.
3. Discovered the positive protons inside the nucleus.
4. Organisms that are being protected in Ras Mohamed protectorate.

**C What is the scientific principle of elements classification in the modern periodic table ?****23 Sohag Governorate**

El-Manahel Private Language School

Answer the following questions :

**Question 1****A Complete the following sentences with suitable words :**

1. Elements of ..... block are located on the left side of the modern periodic table, while the elements of ..... block are located in the middle.
2. Sodium oxide is from ..... oxides, while carbon dioxide is from ..... oxides.
3. Halogens are ....., and form ..... ions during chemical reactions.
4. The mold carries the ..... details of the structure of the living organism, while the cast carries the ..... details of the structure of the living organism.
5. .... and ..... are from extinct species at the old geological ages.

**B Give reasons for :**

1. The desert is affected by the absence of one of its species.
2. Abnormal properties of water.

**C If the temperature was  $10^{\circ}\text{C}$  at the height of 3 km. calculate the temperature at the sea level.**



## Question 2

### A Choose the correct answer :

- ..... is the scientist who arranged the elements in ascending order according to their atomic numbers.  
a. Rutherford      b. Moseley      c. Mendeleev      d. Bohr
- The difference in electronegativity between the elements of a polar compound is .....  
a. very high.      b. relatively low.      c. zero.      d. relatively high
- The high ratio of ..... in drinking water leads to blindness.  
a. chlorine      b. mercury      c. lead      d. arsenic
- The planes fly in the lower part of .....  
a. troposphere.      b. stratosphere.      c. mesosphere.      d. thermosphere.
- ..... protectorate is the first established natural protectorate in Egypt.  
a. Saint Catherin      b. Ras-Mohamed      c. Wadi El-Hetan      d. Petrified forest
- Archaeopteryx is a connection between ..... and .....  
a. fish and amphibians.      b. reptiles and birds.  
c. birds and mammals.      d. amphibians and reptiles.

### B Mention the use of each of the following :

- Radioactive cobalt 60.
- Halons.
- Van-Allen Belts.
- Hofmann's voltameter.

### C Compare between :

- Ferns fossil and dinosaur's egg fossil (concerning the type of fossils).
- Infrared rays and ultraviolet rays (concerning their effect).

## Question 3

### A Write the scientific term :

- A type of water pollution resulted from dumping atomic wastes in oceans and seas.
- The weight of an air column of atmospheric height on a unit area.
- The solidified resinous matter which was secreted by pine trees in old geological ages.
- Elements that have the properties of metals and nonmetals.
- The continuous decrease in the number of a certain species of living organisms, without compensation until they all die out.
- An atmospheric layer contains limited quantities of helium and hydrogen gases only.

**B What happens when ... ?**

1. The continuous increase in the percentage of carbon dioxide gas.
2. Mendeleev predicted the discovery of new elements.

**C Write the balanced chemical equations which express the following reactions :**

1. Burning of magnesium in oxygen.
2. Sodium with water.

**Question 4****A Put (✓) or (✗) in front of the following sentences :**

1. The modern periodic table consists of 18 horizontal periods and 7 vertical columns. ( )
2. Metals don't react with acids. ( )
3. The atomic size decrease in the same group in the modern periodic table, by increasing the atomic number. ( )
4. Mixing human and animals wastes with water is considered as a biological pollution. ( )
5. The upper part of the thermosphere is called the ionosphere. ( )
6. Panda bear is from endangered species. ( )

**B What is meant by ... ?**

1. Aurora phenomenon.
2. Chemical activity series.

**C Locate the following elements in the modern periodic table :**

1. Fluorine ( ${}_{9}\text{F}$ ).
2. Argon ( ${}_{18}\text{Ar}$ ).

**24 Luxor Governorate**

Arment Directorate

Answer the following questions :

**Question 1****A Complete the following statements :**

1. Archaeopteryx fossil represents the link between ..... and .....
2. Modern periodic table consists of ..... horizontal periods and ..... groups.
3. Elements of group (1A) are called alkali metals as their elements react with ..... forming .....
4. The infrared rays have ..... effect, while ..... rays have chemical effect.



**B What happens if ... ?**

1. A metal atom losses one electron or more during the chemical reaction.
2. An organism is buried fast after death in snow.
3. Mixing of water with animal and human wastes.
4. Erosion of ozone layer over an area.

**C Locate the following elements in the modern periodic table :**1.  $_{18}\text{Ar}$ 2.  $_{20}\text{Ca}$ **Question 2****A Write the scientific term :**

1. The continuous decrease without compensation in the number of a certain speices until all members die out.
2. Charged layer which reflects radio waves.
3. Elements that starting to appear from period number four in the modern periodic table.
4. Appearance of bright colored light curtains at both poles of the Earth.

**B Cross out the odd word :**

1. Dodo bird / Bald eagle / Ibis bird / Rhinoceros.
2. Helium / Cesium / Xenon / Radon.
3. Sodium / Silver / Potassium / Cesium.
4. Oxygen / Nitrous oxide / Water vapor / Carbon dioxide.

**C Compare between :**

Mold and cast (according to definition).

**Question 3****A Choose the correct answer :**

1. .... is the coldest layer of the atmospheric envelope.  
a. Ionosphere      b. Mesosphere      c. Stratosphere      d. Troposphere
2. Eating fish containing high concentration of ..... causes death of the brain cells.  
a. arsenic      b. lead      c. cobalt 60      d. mercury
3. The scientist ..... had discovered the main energy levels.  
a. Moseley      b. Bohr      c. Mendeleev      d. Rutherford
4. The ..... replaces the wood material part by part of an old tree.  
a. copper      b. minerals      c. lead      d. iron

**B Give reasons for each of the following :**

1. Pilots prefer to fly their planes in the lower part of the stratosphere.
2. Halogens are monovalent.
3. Formation of petrified woods fossils.
4. potassium is more active than sodium.

**C Problem :**

Calculate the height of a mountain, if the temperature at its foot is  $30^{\circ}\text{C}$  and at its top is  $-6^{\circ}\text{C}$ .

**Question 4****A Correct the underlined words :**

1. Meteors burnt in the stratosphere.
2. Pure water has alkaline effect on litmus paper.
3. Slides of copper are used in making computer sets.
4. Magnesium oxide is an acidic oxide.

**B Put (✓) or (✗) :**

1. Wavelength of near ultraviolet radiation is 280 : 315 nanometer. ( )
2. Tropical forest is an example of complicated ecosystem. ( )
3. Chlorine can replace bromine in its salt. ( )
4. Quagga is an example of extincted animal in old geological ages. ( )

**C Write the balanced chemical equation for :**

1. Burning of magnesium ribbon in air.
2. Reaction of sodium with water.

**25 Aswan Governorate**

M.M Yacoub Formal Language School

Answer the following questions :

**Question 1****A Choose the correct answer :**

1. All are greenhouse gases, except .....  
 a.  $\text{CO}_2$                       b.  $\text{O}_2$                       c.  $\text{N}_2\text{O}$                       d.  $\text{CH}_4$
2. Sodium oxide from ..... oxides.  
 a. amphoteric                      b. acidic                      c. nonmetallic                      d. basic



3. .... is an example of microfossils.

- a. Mammoth      b. Ferns      c. Foraminifera      d. Archaeopteryx

4. There are ..... bonds between the water molecules.

- a. hydrogen      b. covalent      c. ionic      d. metallic

**B** What is meant by ... ?

1. Metalloids.      2. Fossil.

**C** What is the importance of ... ?

1. Silicon.      2. Cobalt 60.

## Question 2

**A** Write the scientific term for each of the following statements :

- The boundary separating between stratosphere and mesosphere where temperature is rather constant.
- Replacing part by part the wood material of trees by minerals to form petrified woods.
- Continuous increase of the average temperature of the air near the surface of the Earth.
- A type of ultraviolet radiation that is absorbed completely (100 %) in the ozone layer.

**B** Compare between :

- Mold and cast. (Regarding to the definition)
- Mesosphere and thermosphere. (Regarding to the importance)

**C** Write the balanced chemical equations which express the reaction of :

- Carbon dioxide with water.
- Magnesium with dil. hydrochloric acid.

## Question 3

**A** Locate the following elements in the modern periodic table :

1.  $_{11}\text{Na}$       2.  $_{20}\text{Ca}$       3.  $_{13}\text{Al}$       4.  $_{18}\text{Ar}$

**B** Give reasons for :

- Alkali metals are kept under the surface of kerosene in the lab.
- The lower part of the stratosphere is suitable for flying airplanes.

**C** Cross out the odd word and mention the relation between the others :

- Dodo bird / Quagga / Bald eagle / Mammoth.
- Panda bear / Rhinoceros / Quagga / Bald eagle.

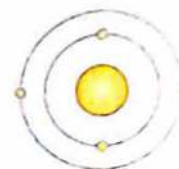
**Question 4**

**A** Complete the following statement :

1. The modern periodic table consists of ..... horizontal periods, ..... vertical groups.
2. Ultraviolet radiation has a ..... effect, and the infrared radiation has a ..... effect.
3. Fossil are used in ..... exploration and determining the age of .....
4. The scientist Mendeleev arranged the elements ascendingly according to ..... , while the scientist Moseley arranged them ascendingly according to .....

**B** Study the opposite figure which explains the electronic configuration for an element in the modern periodic, then conclude the atomic number of the element which follows this element in :

1. The same period.
2. The same group.



**C** Problem :

Calculate the height of a mountain, if the temperature at its foot is  $30^{\circ}\text{C}$  and at its top is  $-6^{\circ}\text{C}$ .



# كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9

